

# ARCHAEOLOGY

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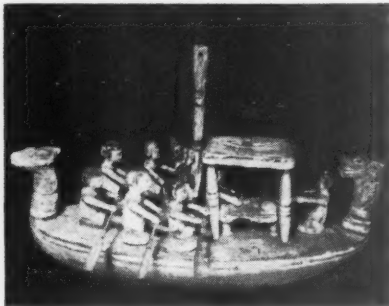
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*Top row, left to right:* Veiled female head. Cyprus. 5th Century B.C. Limestone. Height 14". Funeral boat with animal-head prow and stern. 10 male figures and offering table beneath canopy. Gebel, Egypt. 12th Dynasty. Painted wood. Length 21½". Dionysiac altar relief. Roman. Late 2nd Century A.D. Marble. Height 17".

*Bottom row, left to right:* Bronze Cat. Egypt. Late Dynastic. Height 6½". Relief of Apollo with lyre. Bahnassa, Egypt. 6th-7th Century A.D. Limestone. 15¼" x 20½". Relief of baptism in well. Bahnassa, Egypt. 6th Century A.D. Limestone. 16½" x 10".

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# ARCHAEOLOGY

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ON THE COVER: The head of "Darius, Great King, King of Kings, King in Persia, King of Countries."



By George G. Cameron

## THE MONUMENT OF

THE RELIEF AND INSCRIPTION of the Persian king Darius at Bisitun, Iran, hold a fascination surpassed by few ancient Near Eastern monuments. Here a superbly cut sculpture accompanies the story of the monarch's rise to power as written in three languages with their distinctive scripts. Since the monument once provided a key to the decipherment of these languages—Old Persian, Babylonian (Akkadian) and Elamite—it has justifiably come to be known as "the Rosetta Stone of Western Asia."

Mount Bisitun, the last peak of a long narrow range towering over a wide valley, is impressive in itself, and along its base runs Iran's main east-west thoroughfare, leading from the highlands of ancient Media and Persia to the lowlands of Babylonia. Just where the range ends, there is a copious spring of pure water—the symbol of deity's blessing and fertility—and the traveler following the road must cling close to the flank of Bisitun in order to make his way between mountain and spring. High above his head, just at this spot, is where Darius placed his monument.

The monument is carved in a slight recess facing almost, but not quite, due east. By actual measurement, it is 322 feet from the road up the mountainside to a small ledge cut from the rock immediately beneath the sculptures; a vertical measurement from the road to the elevation of the relief yields a figure slightly in excess of 225

feet. Today one may climb from the road over jagged boulders and large rocks to a spot beneath the monument, but even from this vantage point the relief of Darius is almost one hundred feet directly above, and access to it would seem to be denied to all except Kurdish shepherd boys, foolhardy adventurers, or those in possession of mountain-climbing skills. From a distance—in fact, even from the road so close below—the monument appears dwarfed by Mount Bisitun, yet in actual measurements it is one of the largest rock-cuttings of this type ever attempted by ancient man. Its over-all breadth exceeds fifty-nine feet, its height, twenty-three feet.

Here stands the Great King, flanked by two guards (they appear to stand in single file behind him). Darius rests one foot on his most hated enemy, Gaumata; in front of him, their necks joined by a length of twisted rope, stand (according to the original design of the sculptors) eight conquered "rebels" or claimants to the throne. Above their heads floats the winged figure of the Great King's god, Ahuramazda.

This large relief, nearly eighteen feet long, is delicately, almost exquisitely carved, as if it were to be inspected daily by thousands of visitors. The royal coiffure and garments are shown in all the conventional detail made familiar to us by Assyrian sculptures: the crown ornamented with rosettes and castellations, the beard in



# F KING DARIUS AT BISITUN

pin-curls above and in combed rows below, the robe with embroidered borders, and the plain, laced boot. Where the sculptor erred or the original face of the rock failed to provide a good working surface, a separate piece of carved stone replaced the damaged portion; thus part of the sovereign's beard, his shoulder or back, and his bow are insets, held in place by iron rivets driven through solid rock into the new carving, each rivet being leaded in. Projecting from the rock above the inset crown of the winged Ahuramazda is an iron rod three inches long which once, no doubt, carried the glittering insignia of deity.

This relief formed the center of the original composition. Beneath it, in the place of honor, was inscribed the story of the Great King's early achievements, in his own language, Old Persian. Recounted is the tale of his predecessors, Cyrus and, especially, Cambyses. It is told how the latter secretly killed his own brother, then went off to conquer Egypt. In his absence a man named Gaumata, pretending to be the brother, revolted and, when Cambyses died on the way home from Egypt, claimed the whole Persian empire. Then follows the story of how Darius, with the help of six other Persians and of his god Ahuramazda, fought nineteen battles and not only defeated and killed the pretender Gaumata, but imprisoned or killed eight other pretenders as well—all in a single

year. The reason for his success is succinctly stated:

For this reason Ahuramazda (and the other gods which are) brought aid to me: because I was not hostile, I was not a follower of the Lie, I was not a doer of wrong—neither I nor any of my family. According to righteousness I conducted myself: neither to the weak nor to the powerful did I do wrong; the man who cooperated with my house, him I rewarded well; whoso did injury, him I grievously interrogated.

This entire story is written in the Old Persian language, in four long columns of cuneiform text (to

THE AUTHOR, who is chairman of the Department of Near Eastern Studies at the University of Michigan, did his graduate work at the Oriental Institute of the University of Chicago (M.A. 1930, Ph.D. 1932) and taught there until 1948. Professor Cameron's first visit to Iran was in 1939, when he spent a season with the Oriental Institute's excavation at Persepolis. He has since returned several times; in 1948 he successfully made latex squeezes of the inscription of King Darius as well as magnificent photographs of the relief and inscription which form the Achaemenid monarch's striking monument. Among Professor Cameron's scholarly productions may be mentioned his *History of Early Iran* and *Persepolis Treasury Tablets*.

## Bisitun continued

which, subsequently, a shorter fifth column was added, relating the victories won in the Great King's third year). On two faces of a huge, slanting rock, to the observer's left of the relief, the same story was carved in Babylonian. To the right of the relief was inscribed the identical narrative in Elamite, the third major language of the realm.

AS ACCURATELY as we may now determine, the sculptors, scribes and stonecutters had all but finished their work by the end of the third full year of Darius' reign—that is, perhaps by March of 518 B.C. In the second and third years of his reign, however, new victories had been won, and there came a royal order that the portrait of one of the recently conquered enemies must be added to the relief. In imagination we may almost hear the protests of the scribes as the sculptors hacked out a portion of the Elamite text to the right of the relief so that they might carve the striking figure of a ninth subjugated king: Skunkha, ruler of the "pointed-capped Scythians" from beyond the sea. Protests there may have been, but

nothing remained for the disgruntled scribes and stonecutters to do but to recopy the entire Elamite inscription elsewhere on the mountainside. A new surface was therefore prepared beneath the out-jutting rock bearing the Babylonian version, and on it the Elamite text was carved afresh.

Sculptors and scribes of course had easy access to the scene of their handiwork: a hand-hewn rock pathway. This path, originally more than 115 feet long and varying from four to six feet in width, cuts obliquely across the face of the mountain, in part almost directly beneath the sculptures and inscriptions. Its lower end terminated in a level platform far around a curve of the rocky cliff to the left as one faces the relief; to this platform, no doubt, a stone or mud-brick stairway led directly from the solid ground only twenty feet below. The upper end of the path, still in existence, leads to a ledge five to seven feet wide which lies beneath the Old Persian inscription and which once continued across to the later of the two Elamite texts.

How the sculptors designed and constructed their monument, once they had laid out the course of the ancient pathway, is a question to which there is still no



The mountain of Bisitun (or Behistun, as it is better known), from the east. The road leading west curves to the left (south) around the peak; the monument is carved in a niche just around the curve.



The monument of King Darius at Bisitun (a composite photograph).



The boulder-strewn slope below the sculptured and engraved rockface, showing ladder used for ascent to path leading to the sculptures. White patches are latex "squeezes" in process of being made.

## Bisitun continued

wholly satisfying answer. A theory which I long cherished originated in the fact that beyond the entrance to the ledge just described the path continues on to the right around the cliff, approximately to the height of the top of the carved surfaces. From this upper end, I reasoned, the workmen might have chiseled out a ledge to stand on, clear across the mountain as far to their left as they intended the monument to extend. Working from this ledge (and progressively lowering it as their handiwork took shape) they might first have carved a nearly vertical surface and then labored simultaneously on all three parts of the original design: the relief in the center, the Babylonian inscription to its left and the Elamite text to

its right. These completed, they could again have lowered the ledge by easy stages as they inscribed the four columns of the Old Persian text directly beneath the relief. The ledge still present below the monument, according to this theory, would therefore be merely the last stage of the stonemasons' working platform.

Such a theory, however, runs into difficulties. The surface to the right of the relief does not seem to have been carefully designed, for the top edges of its four columns of text vary considerably in height; this suggests that this particular surface may not have been planned initially to form an artistic unity with the relief to its left. Similarly, the theory fails to account for the fact that the Babylonian text (to the left of the relief) is written on two faces of a slanting, out-jutting rock which would





View from ledge beneath the relief and the Old Persian inscription. Horizontal marks on the inscribed portion show where tufa was removed for clearer reading. Photograph by courtesy of Colonel Ahmed Darvish.

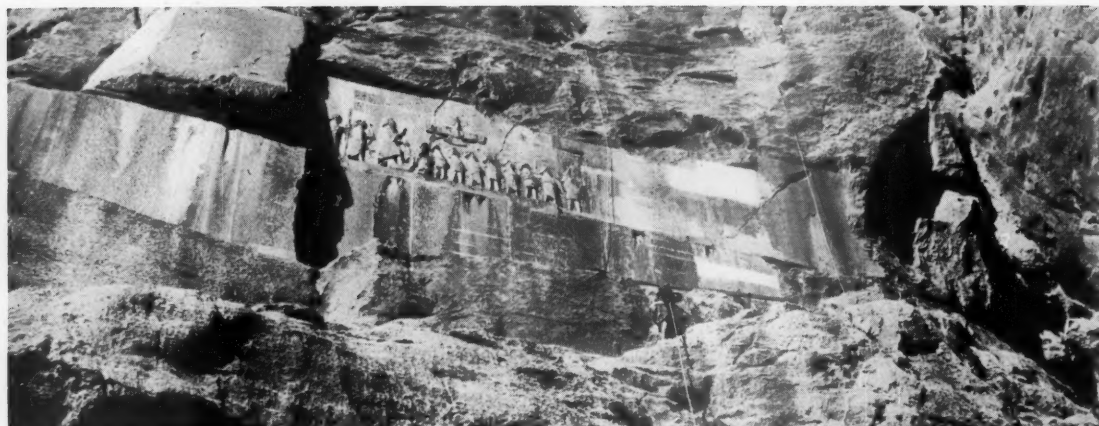
hardly have been left intact if a ledge beneath it had once served as a working platform.

It is quite probable, therefore, that the sculptors simply utilized as best they could the vertical and slanting surfaces and rock faults which existed when they began their task, and that they made no attempt to assure a perfectly symmetrical arrangement beyond that of having the Old Persian text and the relief in the center. That they did at times construct some sort of a precarious wood scaffolding is indicated by the existence of a few rectangular slits, deliberately cut into the rock above and to the sides of the monument. Assuredly, the relief and the Old Persian text were intended to hold the center of the stage; the cuneiform wedges of this version are considerably larger, more carefully and more deeply cut,

than the wedges of the original Elamite and the Babylonian inscriptions—as carefully cut as the relief.

THE INSCRIPTIONS utter dire threats against any later passerby who may think to damage the monument:

Says Darius the King: If you who behold this inscription or these sculptures shall destroy them or not protect them so long as you have strength, may Ahuramazda smite you, may you not obtain descendants, and may Ahuramazda utterly destroy for you whatever you do!



Part of the original path leading to the monument may still be followed. To the right of the sculptures is the older Elamite inscription, partially ruined by the addition of the sculptured figure of a Scythian king. To the left is the Babylonian (Akkadian) version, written on two faces of an out-jutting rock, above the second copy of the Elamite inscription.

## Bisitun continued

But obviously no king—or for that matter, no sculptor or scribe—could protect his work by threats alone. Consequently, when the monument had been completed the means of access were eliminated: the stairway was removed, more than sixty feet of the pathway and part of the mountainside were scarped away by thousands of chiseled strokes, and only some fifty feet of the original path remained to mark its site.

By dint of laborious, almost heroic efforts, Major General (later Sir) Henry C. Rawlinson—a British officer in the service of the Shah of Iran—risked his life to copy most of the cuneiform texts at Bisitun at intervals between 1835 and 1847, and himself became a pioneer in the decipherment of cuneiform texts. No one except Darius himself has a better right to have his name appear at the site, and there it may be found. Beneath the first

column of the Old Persian text, Rawlinson's name and those of two compatriots are carved in the following manner:

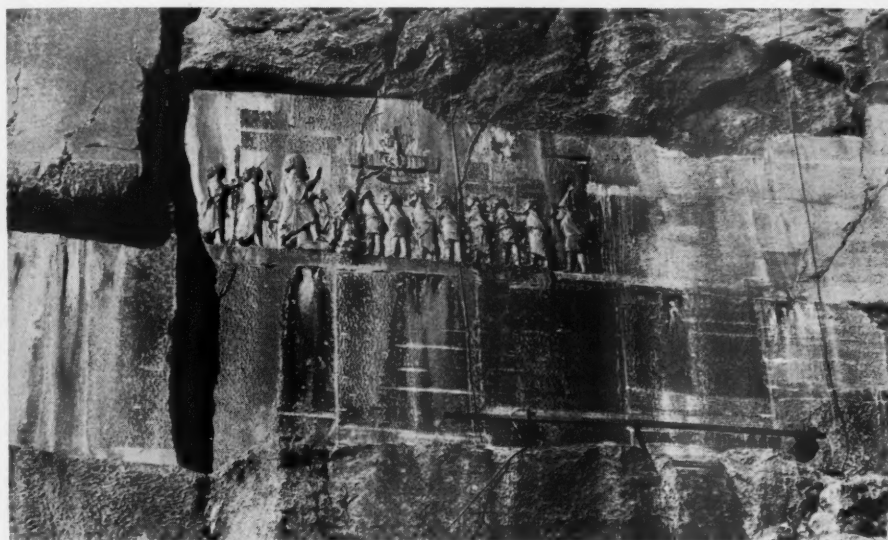
H. C. RAWLINSON	}	1844
J. F. JONES		
A. HECTOR		

In 1904 new and improved copies of all save one inscription were obtained for the British Museum by L. W. King and R. Campbell Thompson. So well did they accomplish their task that theirs is still today the standard text publication, to be supplemented only by a definitive work on all three versions by a distinguished German scholar, F. H. Weissbach.

Since all of this study had been completed by the early years of the twentieth century, however, a re-examination of the sculptures and inscriptions seemed to be demanded for several reasons. The rain and wind of centuries have played havoc with portions of the texts,

*Right:* Eight rebels were first portrayed; a ninth, a Scythian wearing a pointed cap, was added later. In keeping with the artist's conception of the inferior political stature of these opponents, each rebel is only four feet, two inches in height.

*Below:* Four columns of the first (older) Elamite inscription lie to the right of the relief, beneath which are four and a half columns of the Old Persian text.



making them difficult to read, and, in any event, three men reading a worn and eroded inscription may interpret it in three, if not more, different ways. A number of previous readings had been challenged, and scholars had proposed emendations which needed to be checked by improved archaeological techniques against the signs on the fabulous rock. Indeed, one inscription (directly to the observer's right of the relief) had never been copied at all. Other problems which likewise called for a solution were these: Would close inspection of the relief itself reveal any new details of Persian art? And how had Darius' workmen who were planning to carve the relief and accompanying texts been able to reach this spot so high up the mountainside, today all but inaccessible?

In the fall of 1948, under the auspices of the Baghdad School of the American Schools of Oriental Research and of the University of Michigan, I raised an ordinary painter's scaffold to the height of the monument and endeavored to solve some of these problems. As a result we secured a latex rubber "squeeze," or impression, of considerable sections of the inscriptions, including the one text hitherto unread, new readings of a number of difficult passages, previously undeciphered, and adequate photographs of the sculptures. Further study also led to the discovery of the full course of the ancient pathway. Owing to an unfortunate accident, a squeeze of the Babylonian version became unreadable; consequently, in May 1957 I returned to Bisitun, mounted to

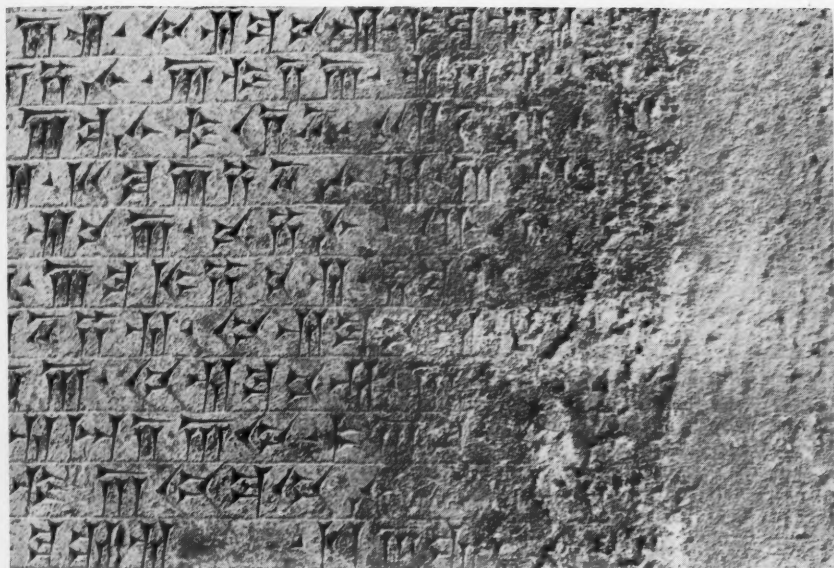
*Right:* The winged figure of the god Ahuramazda.

*Right, below:* The bow-bearer of Darius. Note the piece of stone, on which part of the bow is carved, set in the rock.

*Below:* Darius and his weapon-bearers face the figure of Ahuramazda and the conquered rebels. A sculptor's error (or a defect in the rock) required that the head of one rebel be held in place by an iron peg. This is still in place although a portion of the head has since been destroyed. The figure of the Great King is six feet in height; each of the two guards behind him stands five feet, two inches.







A portion of the Old Persian inscription, Column II, lines 27-37; left: well preserved; center: eroded; right: tufa-covered. The tallest vertical wedges measure 2.8 cms. or  $1\frac{1}{8}$  inches.

## Bisitun continued

the height of this particular text by means of a crude adaptation of a boatswain's chair, and obtained a new, and what I consider to be a perfect, rubber impression.

Fortunately, some passages which had always been thought to have suffered from erosion were in reality merely obscured by a glaze-like calcareous tufa (or, perhaps more correctly defined geologically, travertine) produced by the seeping waters of centuries. Rawlinson and others had erroneously thought this to be a deliberately applied coat of "siliceous varnish . . . of infinitely greater hardness than the limestone rock beneath it." In actual fact the tufa has protected and preserved from weathering the cuneiform characters underneath; it can be removed by delicate hammering so that the original rock appears, and the hitherto unread signs can be determined because there is a difference in color between the rock and the tufa-filled wedges.

Most of the corrections and additions to the readings of the Old Persian text thus obtained have been incorpo-

rated in Roland G. Kent's volume, *Old Persian*, first issued in 1950; others have appeared or are appearing in the *Journal of Cuneiform Studies*. The heretofore unread text to the right of the relief proved to be identical in every major respect with the Elamite inscription which was later carved to the left of the relief.

Some of the new readings are inconsequential; others have produced significant new words in the Elamite and Old Persian languages or certainty in specific chronological and historical points. Still others have added new problems, chiefly because the inscriptions have suffered so much from erosion that assured readings are not possible in all cases. The Iranian Government had hoped to insure the monument from further deterioration by the elements, but there is no way to stop the water seepage from the rock or the abrasion of windblown sand, short of removing the whole monument to the shelter of a museum. After all, it has stood the wear and tear of twenty-five hundred years! The best preservation, therefore, is recording and publication, so that knowledge of it will be available to all men so long as books exist.

# Monasteries and Their Manuscripts

By Morton Smith

SCATTERED THROUGH GREECE AND CYPRUS and around the southeastern corner of the Mediterranean are hundreds of Greek monasteries, some of them new foundations, others boasting of continuous occupancy from as early as the fifth century. Many have small libraries, and from these the scholars and adventurers of earlier centuries brought to the West great numbers of important manuscripts. In the present century, therefore, both ecclesiastical and civil authorities have taken steps to concentrate in a few large collections those old manuscripts which still remain in their hands. They have been so successful that scholars now generally think the holdings of the minor monasteries consist almost entirely of manuscripts which are comparatively modern "and therefore worthless." Let us, however, look at them more closely.

The library of a Greek monastery is often a small, dark room with books piled in cases or on the floor, in considerable disorder and covered with dust. The room is locked, of course, and normally the superior of the monastery has the key. To the ordinary visitor the collection seems utterly static. This impression is false. As a matter of fact, the upper members of the monastic hierarchy usually are able to borrow books, and the superior may, at his own discretion, lend books also to the lower-ranking members. Once a book is borrowed, it is apt to be out on what amounts to faculty loan—"it may be for years and it may be forever." The Byzantine scholar Nikos Beës has left us a graphic account of his search

for books at the monasteries of the Meteora (*Ektthesis palaigraphikon kai technikon ereunon*, [Athens, 1910]). They emerged from under beds and on tops of rafters and from behind wall paneling and under loose boards in the floors. Such an account shows clearly the extent to which the accumulated reading material of a monastery surpasses both what is in the library and what is known to any individual monk. This is particularly true when the monastery is merely the center of a large ascetic community, many of whose members live around it in nearby caves or cottages. Residence in nearby caves, for instance, was long the custom at Mar Saba, the great ascetic monastery in the wilderness of Judea, a few miles southeast of Jerusalem. There the walls of the *wadi* in which the monastery is built are honeycombed with caves, for long distances up and down stream. In these caves (as in those of Qumran, just a few miles away) manuscripts have been found, testifying to the fact that the library proper was merely the center of book distribution. The same is true of the cottages around the monasteries of Mt. Athos. Some 275 manuscripts have come to light in them since the publication, early in this century, of the major catalogues of Athonite manuscripts, and undoubtedly more are yet to be found.

What one sees, therefore, when one looks at an ordinary monastic library, is merely a residue of the monastery's books. This residue is considerable, because the primary concern of the monks is not reading but worship.



The monastery of Mar Saba, seen from its tower. Note the heavy fortification wall.



Part of Mar Saba, showing the tower which houses one of the monastery's two libraries.

Many monks pass the first six hours of their day in church, for in monasteries which preserve the ancient discipline services begin about midnight and rarely finish by six A.M. Vespers take another two hours, and on great festivals the services are much longer. So in speaking of books and libraries, we are talking of a merely incidental concern of monasticism.

Given this fact, the surprising thing is how much copying of books has always been done. The principal reason is practical need of the text copied. Copies, therefore, are commonest of liturgical texts, church music, New Testament material, psalters and canon law. Some of these could be bought, but in monastic communities money is often rarer than time. Besides, it is an act of piety to copy a book, and piety shows itself especially in the many copies of services for the festivals of particular saints, and the like. Another reason for copying is didactic—to make a disciple copy a text is one way of assuring that he will read it word for word. Much mate-

rial on the spiritual life and some documents on monastic discipline continue to be copied for this purpose, as they may have been in Qumran. Finally, individuals will copy texts which they do not need but which happen to interest them. So copying has always flourished in the monasteries, whether or not there were organized scriptoria.

At present, copying is generally done on ordinary paper. But formerly paper was rare and expensive, so every spare page of available books was pressed into use. Thus a seventeenth-century edition of the Ignatian epistles, in Mar Saba, had copied onto its last pages, probably in the early eighteenth century, a passage allegedly from the letters of Clement of Alexandria. Since the letters of Clement are almost unknown, the manuscript has considerable importance if the attribution is correct, and not least as an illustration of the fact that persons hunting for manuscript material should not neglect printed books. Not only end papers and blank pages, but even margins often contain considerable manuscript additions.



One side of the tower library at the monastery of Mar Saba during the investigation of its collection of manuscripts.

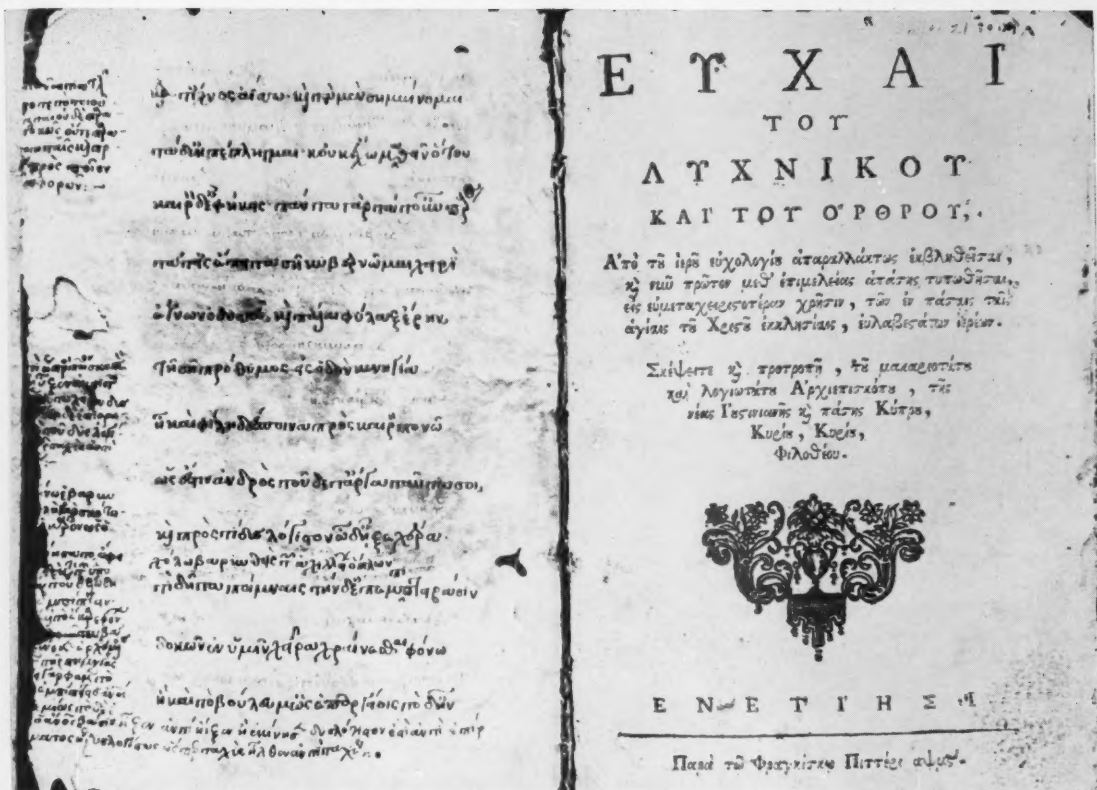
## Manuscripts continued

Another thing to be noticed is the binding. Because paper was rare and expensive, old manuscripts were used to bind new books. For instance, one printed book in Mar Saba has not only received important manuscript additions fore and aft, but has, for end papers, pages from a late mediaeval Georgian manuscript of the life of St. Onophrius. (For identification of this, my thanks are due to Father Bridgeman of Trinity Parish, New York, and Prof. Der Nersessian and Mr. Zizichvili of Dumbarton Oaks, Washington.) Another printed text in the same library has end papers from a fifteenth-century manuscript of Sophocles' *Ajax*, with scholia. And old manuscripts were used not only as end papers, but also for pasteboards inside bindings. Beneath the Georgian end papers mentioned above were cardboards made of layers on layers of old manuscripts glued together. On top was a twelfth-century Greek liturgical text, below that came another Georgian manuscript, then an eleventh-century Greek liturgical text, then an Arabic text, almost

effaced, then one even more obscure, perhaps in Hebrew, then another Georgian text, and finally a tenth-century Greek liturgical text. These fragments happen to be short and uninteresting, but the bindings of two other volumes in the same library yielded seven slabs of pasteboard, each composed of half a dozen sheets of a twelfth-century manuscript of the sermons of St. Macarius.

LET US RETURN to the function of the monastic library. We have spoken of its lending books. When, eventually, the borrowers die, their books revert to it—unless some other member of the community wants to borrow them at once. A monk's books are apt to be borrowed by his disciples, for the relations between disciple and master are often close. Thus particular traditions may remain peculiar to particular groups or spiritual successions within a large monastery. This may account, sometimes, for the loss of books. In the Acts of the Martyrs of Mar Saba, who perished in the Arab attack of 788, we read of one monk, Sergius of Damascus, who, "because he was a disciple of the superior, knew the place where the





Title page of printed prayer book at Mar Saba, with page from 15th century manuscript of Sophocles' *Ajax* used as end paper.

sacred garments and ecclesiastical vessels were hidden" (J. Phokylides, *He hiera lawra Saba tou Hegiasmenou* [Alexandria, 1927] 419) and therefore tried to escape lest, being tortured, he should reveal it. The same danger did not exist for the other monks because they did not have the same knowledge. Similarly, it could happen that only the librarian and his immediate disciples would know where the oldest manuscripts were hidden. As a matter of fact, the same community preserves a story to the effect that before another Arab attack many of the oldest manuscripts were hidden in a cave somewhere in the canyon below the monastery and never recovered. Some of the Qumran material may have been lost in the same way.

In spite of such losses, the return of books to the monastic libraries is considerable, especially when the community is declining in numbers. A list of the year 1910, when there were fifty or sixty monks in Mar Saba, gives the number of volumes in the library as 191. Today there are thirteen members in the community and four or five hundred volumes in the tower library alone. In other

words, the library has served as a sort of *genizah*—a depository for the books which the community no longer uses but does not wish to destroy.

The libraries reflect the life of the monasteries—chiefly, of course, the concerns mentioned above: liturgics, music, canon law, scripture, hagiography, ascetica, disciplinary and documentary material. They also show the intellectual fashions of the world outside: late Byzantine Aristotelianism is succeeded by Classical and patristic learning of the fifteenth-seventeenth centuries; then come the belletristic excerpts from standard authors, model letters and texts on politeness designed to educate an eighteenth-century abbé, and finally the historical and, in Greece, patriotic material connected with the upheavals of the nineteenth century.

This reflection of monastery life is not complete. Some elements of monastic tradition did not usually receive literary form. Others were written but not preserved. The Classical texts of the monasteries were systematically hunted out by both eastern and western European collectors or dealers. Early texts of any sort were apt to go

Hagia Triada, in the Meteora monasteries in northern Greece.



### *Manuscripts* continued

the same way. Other material has probably been lost altogether by accidents, especially fires (a number of large libraries have burned out completely), wars and subsequent looting, neglect and the cleaning or liquidation of monasteries, accompanied by the notion that only old manuscripts are of value.

TWO CONCLUSIONS FOLLOW: First, arguments from silence as to the content of the intellectual tradition of the monasteries are extremely weak. We know that destruction has been extensive, but cannot say with confidence just what has been destroyed, nor how long it survived. The peculiar distribution of books and the existence of special traditions within monasteries does not even permit us to say that because a certain work is unknown to a particular monastic writer, it was not in his monastery. It may well have been there without his knowing it. Second, date alone is of little importance in determining the scholarly value of a manuscript. We know from the bindings mentioned above (and there are many like

them) that fragments of old manuscripts were easily available down to the middle of the last century. The same fact appears from the records of the nineteenth-century collectors—Tischendorf alone is said to have brought back some fifty uncials (R. Curzon, *Visits to Monasteries in the Levant* [Ithaca, New York 1955] 22)—and from the many manuscripts of the period which claim to be copies of much older texts. We also know from the hundreds of manuscripts written during the eighteenth and nineteenth centuries that the monks of that period were by no means as illiterate or indifferent to manuscripts as their Western visitors reported. For a variety of reasons those reports must be sharply discounted. It is certain that the major monasteries were never wholly without men of sufficient learning to read their books and sufficient interest to copy them. We cannot rule out the possibility of their having read and copied material which has since been lost to us. Therefore even the modern manuscripts in these libraries deserve inspection.

IN THE MAIN, there are now two sorts of Greek monastic



Book in the library of Mar Saba, showing the Georgian manuscript which was used as an end paper (*below*). This is folded back to reveal a Greek manuscript beneath it, which is part of the book's binding.

libraries: the big, famous collections, with hundreds or thousands of manuscripts, and the little ones, with about a hundred at most. The first sort—those in Athos, Patmos, Jerusalem, Mt. Sinai, Alexandria—are mostly well known. An exception has been the collection of the famous monasteries of the Meteora, in Thessaly. Of those which remain in operation, Barlaam, the Metamorphosis, Hagia Triada and Hagios Stephanos have libraries. A check list of the manuscripts was prepared for the Metropolitan of Trikka by Professor Beës, a few years before his death, and the kindness of the Metropolitan permitted me to visit the libraries and to photograph this list. It has entries for 300 manuscripts in Barlaam, 632 in Metamorphosis, 124 in Hagia Triada and 142 in Hagios Stephanos, 1198 in all, though a few entries were left blank and a few manuscripts were reportedly not found. The whole collection has a larger proportion of liturgical material than I had hoped, but includes early patristic texts which may be important, a number of texts from the late Byzantine and post-Byzantine Greek Church, and some pseudepigrapha which are certainly rare and possibly unique.

By contrast with the Meteora we may take, as an example of a small collection, that at Mar Saba. Saba, a Cappadocian, founded his monastery in 483, and from that time to this the life of the community has been interrupted only for brief periods by military force. The present monastery is a complex of structures from allegedly fifth-century foundations to nineteenth-century buttresses. The cells cling like birds' nests to the face of the cliff, each one of them a front on its particular cave. What may be hidden in the recesses of the caves, heaven only knows. There are two libraries, one in the church, the other in the tower at the top of the fortifications. This latter library I had the privilege of examining piece by piece. The examination yielded some ninety items which could be catalogued as manuscripts, and two folders full of loose manuscript material. Besides the items mentioned earlier in this article, the collection contains one or two early patristic and ascetic excerpts which may be of importance. For the rest, there is the usual predominance of liturgical material. Some of the *bagiographica* may be of interest as evidence of the particular tradition of the monastery, which was influential in its day. Almost all the material is of the seventeenth century and later. The earlier manuscripts were carried to Jerusalem in the mid-nineteenth century, by order of the Patriarch, and now form the well known Mar Saba collection in the central library of the Patriarchate.

In sum, then, because of the peculiar ways in which monastic manuscripts were handed down, the minor collections of recent manuscripts scattered through the Balkans and the Near East may contain a number of items important for Classical and patristic studies. Here, as in archaeology and in papyrology, a great deal of comparatively worthless material must be gone through in the hope of finding a few things of value. Such, at least, would be the opinion of a scholar interested exclusively in the ancient world. One whose interests extended to the Middle Ages and to the modern history of the Near East would find in these small libraries the detailed record of an important part of the intellectual life of the Orthodox Church through those periods.

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A NATIVE of Philadelphia, the author studied at Harvard University (A.B. 1936, S.T.B. 1940, Th.D. 1957) and at the Hebrew University, Jerusalem (Ph.D. 1948). His research has led him to Greece as well as to Palestine. Dr. Smith has taught at Brown and Drew universities and is now Associate Professor of History at Columbia University.



Terra sigillata bowl found at Goszczynno, in the district of Łęczyca.

Terra sigillata bowl with the name-stamp ALBUCI/VSF/ partly visible at right. From Wymysłowo, district of Gostyń.



## PROVINCIAL ROMAN POTTERY IN POLAND

BY STANISLAW JASNOSZ

WE KNOW that during the first centuries of our era Slavonic tribes occupied an enormous area extending from the Oder River basin in the west to the Dnieper basin in the east, and had a highly developed culture based on their own traditions.

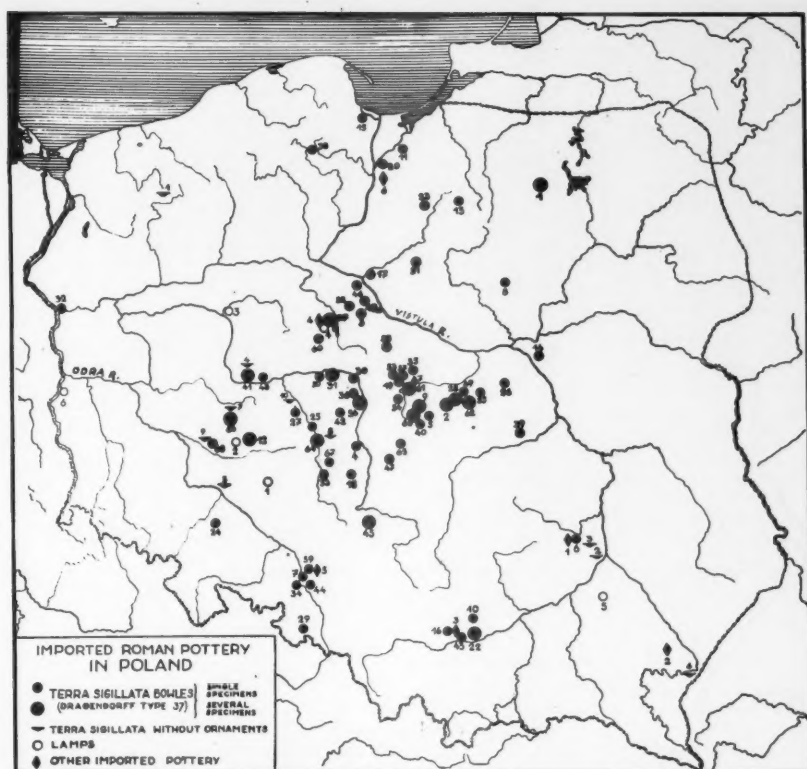
During this period folk-groups belonging to the so-called Venedian culture were living along the Vistula within the area between the Oder and the Bug rivers. This culture takes its name from the Veneti, or Ouenedai, as tribes living south of the Baltic Sea were called by Greek and Roman authors. In studying the characteristics of the Venedian culture, also known as the "pit-grave culture," Polish archaeologists have singled out two distinctive groups: the southern group of Przeworsk and the northern group of Oksywie. Both are known to have developed toward the end of the second century B.C. and to have definitely discarded bronze as the basic material for the production of implements, replacing it completely by iron.

Toward the beginning of the first century A.D., infiltration from the highly civilized Roman provinces proved to be a strong stimulus to the culture of the Slavonic

tribes. Evidence is furnished by the considerable quantity of objects produced by factories in the Roman provinces and in Italy. Through far-reaching barter these articles came into the present Polish lands, where they were exchanged for local goods; among these, skins and furs, slaves and amber—called the gold of the north—appeared to have been the goods most in demand, in addition to some articles of lesser value. As to the imports, a large variety is distinctly visible in the archaeological record: bronze and pottery vessels, less frequently glass and silver vases, fibulae and other ornaments such as glass beads and bronze rings, toilet articles, implements such as knives and keys, weapons such as swords and javelins, and figurines representing Roman and Egyptian deities.

Roman coins, which are found almost everywhere in great quantities throughout Polish territory, seem to have been, at least partly, the currency in circulation. Besides coins and bronze vessels, pottery constituted an important part of the imported articles. In spite of a developed, indigenous potter's art, and despite the difficulties which must have arisen in transporting fragile objects from afar, provincial Roman pottery was for Sla-





MAP SHOWING THE DISTRIBUTION OF IMPORTED ROMAN POTTERY IN POLAND

vonian folk-groups an article of luxury, in demand all over Poland. The chief reason presumably lies in the high technical achievement and artistic skill exhibited by these imported vessels.

A word should be said about *terra sigillata* ware, which appears to form the largest group among imported pottery vessels. This ware is characterized by its beautiful color and rich ornamentation. Within Poland's actual boundaries we know of eighty-five sites where vessels of this type have been found, more than seventy of which have yielded pots with plastic adornment (Dragendorff's Form 37). Since in some cemeteries and settlements several vessels of this kind have been found (for instance, six at Wymysłowo, district of Gostyń, and more than ten at Nowa Huta near Cracow), the total number of imported vessels of this type in Poland amounts to 207. *Terra sigillata* vases were also used as cinerary urns, especially at Goszczynno, Leśno and Sadłowo, and thanks to this custom we are able to find some of these vases in a perfectly preserved state. The majority, however, were almost completely destroyed when used in cremation ceremonies and have left only fragments from which the

original shape is not easily recognizable. In several settlements broken sherds of *terra sigillata* are all that remain.

Some vessels and sherds bear stamps with the names of the artisans or slave-potters who made them. Considered together with certain stylistic features of the plastic decoration, these stamps help us to determine the place of production as well as the period in which *terra sigillata* first entered Poland. We are thus able to state that the majority of the *terra sigillata* vessels were introduced toward the middle of the second century A.D. This was the period marked by the most intensive commercial relations, which are reflected in the considerable quantity of goods of all kinds imported from the Roman provinces. But then we are struck by the fact that at the close of the second century these contacts suddenly stopped almost completely. We may suppose this to have happened in consequence of the wars between the Romans and the Suevian tribes of the Marcomanni, followed by the interruption or at least the decided lessening of the exchange of merchandise between provincial Roman factories and the people living north of the Carpathi-



*Left:* One-handed jug from Lachmirowice, district of Inowrocław. *Center:* Lamp with the head, in relief, of the Emperor Vespasian. From Kowanówko, district of Oborniki. *Right:* Bowl bearing the name-stamp IOFECI. Found at Żerków, district of Jarocin.

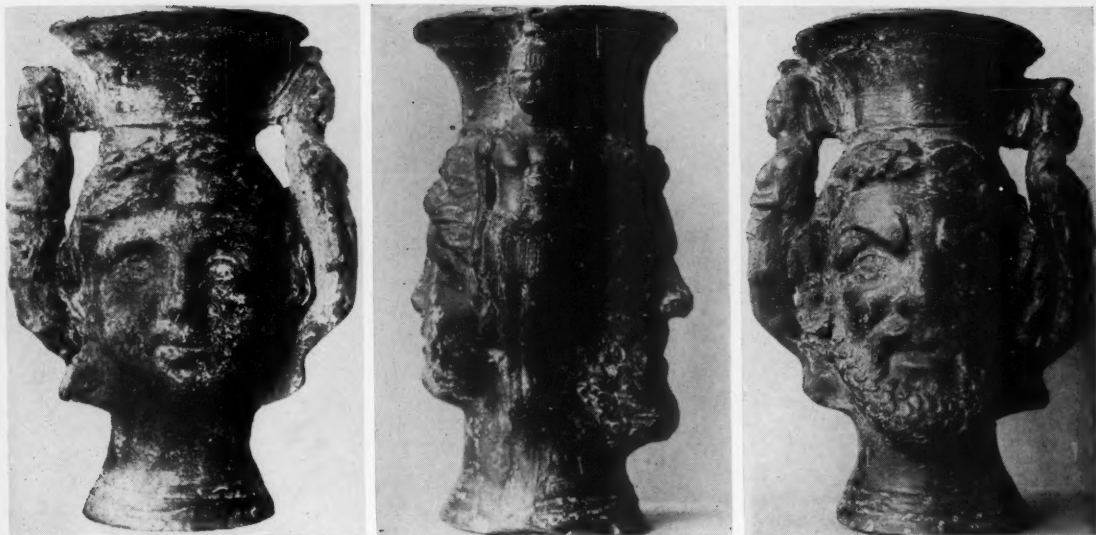
## ROMAN POTTERY continued

ans; the archaeological record provides evidence that these contacts did not again reach their former intensity.

It has been proved that the terra sigillata articles arrived in Central Europe from the main centers of ceramic production in Central Gaul (Lezoux and others) and from those in eastern Rhenish Gaul (Rheinzabern, Heiligenberg, Westerdorf, Blickweiler and others), which are known to have been active in the second century and the beginning of the third. Transportation facilities were offered by the Danube, along which were scattered branch offices of important factories, storehouses and distribution centers, as for instance the well known commercial centers of Vindobona, Carnuntum and Aquincum. But traffic was not limited to the river route only, since it could be directed over the well planned network of Roman roads. Before reaching Poland the goods had to take the ancient and much traveled commercial route from Carnuntum along the Morava River, through the Moravian Gate, crossing Silesia, penetrating into Central Poland and finally touching the Baltic shore. Excavations carried out near Elbląg (Elbing) near the Gulf of Gdańsk uncovered a pot bearing the stamp TARVACF, which comes from Rheinzabern, a factory which was still turning out its special products at the close of the second century.

There is thus evidence of the maritime route also having been used to transport products manufactured in the Lower Rhine Province. From here they crossed the North Sea and followed the Jutland coast, to be deposited finally on the southern shore of the Baltic Sea. This appears to have been the way generally taken by bronze vessels exported from workshops along the Lower Rhine. Its significance increased considerably during the Marcomannic war mentioned above.

But if we consider the accumulation of terra sigillata pottery in Central Poland, we notice that there is insufficient evidence as to the existence of commercial land-routes connecting this territory with East Gaulish production centers. A trade route should have run through Saxony and Brandenburg. However, the scarcity of imports in the latter province, in Lower Silesia, and along the Middle Oder and the Lower Warta absolutely denies such a possibility. Moreover, we may observe in the Middle Oder basin the lack of large quantities of Roman coins, which are an important index for commercial relations. Let us also point to the fact that the territories lying between the Middle Oder and the Havel were but sparsely populated on account of the dense woods and marshes which covered them; these provided a natural boundary between the Slavonic and German tribes. In Central Poland, however, the great number of finds of terra sigillata may be connected with the general eco-



Goblet of elaborate form. On one side a male head of satyr-like appearance; on the other a face of a youth or maiden. The handles are formed in the shape of youthful figures wearing peaked caps and abbreviated tunics.

nomic and social situation of the Venedian tribes. We may presume that in Central Poland there were local distribution centers whose activity may have been concentrated mainly upon moving this particular ware through the area.

Other imported vessels and products of the potter's art are less common in Poland than terra sigillata. Workshops in the northeastern provinces of the Empire which manufactured two-handled amphoras sent them northward, chiefly toward Eastern Slavonic domains. In Poland we have but a single vessel found at Giebułtów near Cracow. In other Polish sites excavators found several imported one-handled jugs (Lachmirowice), two amphoras (Giebułtów, Chmielów) and a dish (Cząstkowice). So-called *terra nigra* vessels occur only rarely in Poland. They probably took the same commercial route as the terra sigillata products and, like these, were manufactured in special pottery centers of the Rhenish province. A unique find is a beautiful two-faced goblet unearthed at Topolno, district of Świecie. It arrived there probably by the maritime route from a potter's shop in Eastern Gaul or the Rhineland, where such vases were produced in imitation of Greek and Campanian models. From the same centers probably came small beakers having narrow feet adorned with pyramidal knobs and covered with a greenish glaze (Lachmirowice).

Pottery lamps seem also to have been imported into Poland, but we know only two which are definitely of

provincial Roman origin. We can hardly imagine oil-lamps as important articles of trade; it appears more likely that these were the private property of traveling merchants and came incidentally into the possession of a local person.

The number of sites with vessels of terra sigillata is several times higher than that of sites having other pottery imports from the Roman Empire. This may be ascribed not only to the high demand for this kind of article but also to the organization of wholesale production for export. Terra sigillata owes to its excellent quality the fame which it enjoyed as a luxury item for a rather limited number of purchasers. As grave furnishings such vessels are found with other imported goods such as bronze vessels, safety pins, etc., which are characteristic only of the rich burials of the tribal chieftains. This is perhaps why they did not influence local ceramic production, either in a tendency to imitate or in mastering the technical skill or in adapting foreign artistic embellishments for local products. The terra sigillata earthenware remained thus only a classic example emphasizing the infiltration of culture elements which spread from the Roman provinces.

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BORN at Tarnów, Poland, in 1921, the author has the Master of Philosophy degree and is at present Vice-director of the Archaeological Museum at Poznań. Among Mr. Jasnosz' many publications the most important is a monograph on the cemetery of the late Latène and the Iron Age at Wymysłowo (1952).

# THE OLDEST PORTRAYAL OF THE NIOBIDS

By Herbert Hoffmann

NIOBE WAS THE DAUGHTER of King Tantalus and the wife of Amphion. She had a large family—six sons and six daughters—and foolishly boasted that she was at least equal to the goddess Leto, who had given birth to but two children. Thereupon the two children of Leto, Artemis and Apollo, avenged the insult to their mother by slaying *all* the children of Niobe.

This is essentially the story as it is told by Homer (*Iliad* xxiv. 599-620). The origins of the Niobid legend, however, are older than the Homeric epic and probably go back to an ancient Near Eastern source. Aeschylus and Sophocles, Pindar and Sappho—indeed most of the great tragic and lyric poets of Greece—concerned themselves with the fate of Niobe and her children. Phidias represented the Niobids in relief on the sides of the throne of Zeus at Olympia, and there is reason to believe that the same subject was depicted by the most famous of Greek mural painters, Polygnotus. A reflection of this lost painting may be preserved on a red-figured calyx-crater in the Louvre Museum (the piece from which the name "Niobid Painter" was derived).



Until recently the earliest representations known of the Niobid legend in Greek art did not antedate the fifth century B.C. We now have a new discovery: a vase of the second quarter of the sixth century which depicts the Niobids. This is older, by over a hundred years, than any previously known representation of the legend.

The vase, an ovoid, two-handled jar (neck-amphora), has recently been acquired by the Hamburg Museum für Kunst und Gewerbe. Nothing is known about its provenance. The chief decoration consists of a narrative zone on the shoulder, a lotus-palmette festoon around the greatest diameter, and two zones of animals below. This scheme is characteristic for a class of black-figured vases to which the misnomer "Tyrrhenian" has adhered. "Tyrrhenian" vases—for the most part amphoras such as this—represent the output of an Athenian workshop active in the first half of the sixth century B.C. It has been possible to identify on various examples the hands of several painters (D. von Bothmer, *American Journal of Archaeology* 48 [1944] 161ff.). The Hamburg amphora is by the Castellani Painter (attribution by Dr.





A black-figure amphora now in the Museum für Kunst und Gewerbe, Hamburg, Germany. Made of fine-grained non-micaceous orange clay, it was badly broken and has been mended. Red and white color has been added and some details are incised. A fuller account will appear in the *Jahrbuch der Hamburger Kunstsammlungen* 6 (1961). Height 41.5 cm.; rim diameter 14.2 cm.

Herbert Cahn), so named after a vase formerly in the Castellani Collection, now in the Museo della Villa Giulia, Rome.

The shoulder has a picture on both front and back. The one which especially interests us is that showing two youths and two maidens fleeing from left to right and turning their heads to look back at a pursuer—a bearded archer clad in a short belted tunic, or chiton, an animal skin, and high boots with pull-flaps. The youths are naked and carry short mantles over one arm. Each raises the forward leg and the arm on the same side of the body in the characteristic attitude of running as generally represented in Archaic Greek art. Their hair is worn long and confined at the end by a band wound around it. The maidens—their skin white and their eyes almond-shaped according to Archaic convention—wear long chitons girdled at the waist.

A second archer—a helmeted female—approaches from the right. She is clad in a short chiton and also wears boots. Both archers have drawn their bows and are about to shoot at the fleeing group.

In black-figure vase-painting a female archer may be an Amazon, or she may be Artemis. Since Amazons generally go barefoot, and the context here is clearly not an Amazonomachy (a battle between Greeks and Amazons), it is safe to conclude that Artemis is meant. The male archer must therefore be Apollo. This god is rarely represented as bearded, although during this period there are other examples, for instance the bearded Apollo on the François Vase.

Apollo and Artemis—the children of Leto—slaying the children of Niobe! The scene hardly allows for another interpretation. It will be noticed that the quivers of both god and goddess are empty. Whereas *two* arrows are about to be shot, *four* Niobids, the survivors of the

A GRADUATE of Harvard University (B.A., M.A., Ph.D.) and a Fellow of the American Academy at Rome (1956-58), the author served as Lieutenant (jg) in the United States Naval Reserve (1953-56). After a term in 1959 as Curatorial Assistant in the Metropolitan Museum of Art, he assumed the post of Curator of Ancient Art at the Hamburg Museum für Kunst und Gewerbe, from where he sends us this interesting commentary on one of the well known episodes in Greek mythology.



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## Niobids continued

original twelve, remain to be killed. Can this inexactitude be accidental? The fact that Apollo and Artemis on "Tyrrhenian" vases as a rule carry arrows in their quivers—as, for instance, in the pursuit of the giant Tityus on the amphora in Tarquinia—makes the omission here appear deliberate and meaningful. The apparent oversight can only be understood in the light of a rare version of the Niobid legend (Roscher, *Mythologisches Lexikon*, s.v. Niobe und Niobiden, columns 373-374) according to which the last two children were spared.

The other side of the shoulder shows the encounter of Heracles with the centaur Nessus. As told by Archilochus, Nessus offered to carry Deianeira, the bride of Heracles, across the river Euenus. Midstream, however, he attempted abduction. Thereupon Heracles pursued the lawless centaur and killed him with his sword.

On the Hamburg amphora a beardless Heracles, clad in a short chiton and with the lion's skin on his head, takes a mighty step and lays his right hand on the centaur's flank. His left hand holds the sword with which he is about to dispatch the centaur. Nessus has released

Deianeira who has slipped down and is standing on the ground. She raises her hands toward her deliverer. Her lips are slightly parted, as if in greeting. Usually Deianeira is shown sitting on Nessus' back. This is simply a variation.

The centaur looks around at Heracles imploringly. His hands beseech mercy. Behind him stand a woman and a bearded man. Both raise their hands in alarm. Are these the parents of Deianeira? More likely they are merely spectators, placed there to fill the empty space. Another female stands behind Heracles, also raising her hands. One is tempted to recognize Athena, the hero's protectress (as on a "Tyrrhenian" amphora in the Louvre), but since there are no attributes she too may well be a spectator.

Finally, from left and right of the main group two other centaurs come charging in. One wields a large branch; the other swings a boulder with both hands. These are the friends of Nessus coming to his aid. Although there is no mention in extant Greek literature associating other centaurs with the Heracles-Nessus episode, there are on several Greek vases similar representations of this scene which include centaurs.



The district of Helice from the air. The Selinus River is at center; to the right of its mouth is a bight, beyond that the mouth of the Cerynites River. One can clearly see the deltas formed by the accumulation of alluvial material. Helice may be expected to lie near, and possibly to the left of, the present mouth of the Selinus, which tends constantly to move toward the east.

IN THE YEAR 373/2 B.C., during a disastrous winter night, a strange thing happened in central Greece. Helice, a great and prosperous town on the north coast of the Peloponnesus, was engulfed by the waves after being leveled by a great earthquake. Not a single soul survived. No natural devastation of such an extent had occurred on Greek soil since more than a thousand years earlier, when the terrific explosion of the volcano on Thera destroyed this island and the surrounding area (See *Antiquity* 13 [1939] 425-439).

The next day two thousand men hastened to the spot in order to bury the dead, but they found none, for the people of Helice had been buried under the ruins and subsequently carried to the bottom of the sea, where they still lie. Ten of Sparta's warships, which happened to be anchored off the coast nearby, disappeared with the town. Afterward some people claimed that Helice's disaster foretold Sparta's defeat at Leuctra, which happened two years later. Aristotle mentions the appearance of a comet as simultaneous with Helice's disappearance. Strabo, Diodorus and Pausanias, Ovid and Pliny, as well

as other less authoritative Greek and Roman writers, are our sources. Heracleides Ponticus (one of the authorities quoted by Strabo) was living at the time of the destruction, as was also Aristotle, then a boy of twelve. (The sources have been collected by Bölte in Pauly-Wissowa's *Encyclopedia*, s.v. Helike. See also J. G. Frazer, *Pausanias's Description of Greece* IV, 165 ff.).

For more than five hundred years the ruins of Helice were visible under the shallow waters. Eratosthenes, who visited the spot about 150 years later, was told by sailors that a bronze statue of Poseidon holding a hippocamp in one hand was still standing under water and often damaged fishermen's nets (Strabo viii.7.2). Ovid, Pliny and Pausanias mention the ruins visible under the water, but without details. Pausanias tells us (vii.24) that the traces of the town were still to be seen, though damaged by the salt water.

Helice was situated between the mouths of the Selinus and Cerynites rivers, forty stades (nearly five miles) east of Aegium, the only one of the original twelve Achaean towns which survives to this day. According to Hera-



# A Submerged Town of Classical Greece

By Spyridon N. Marinatos

Helice was twelve stades (not quite a mile and a half) distant from the sea. It was the most important town of Achaëa and a center venerated by all Ionians. Homer mentions it twice as a renowned place (*Iliad* ii.575, where it is called "broad," and viii.203). It was one of the twelve Ionian towns established when the Athenians, according to legend, colonized this coast, then called Aegialeia (Strabo viii.7.1). When the Achaeans succeeded in expelling the Ionians and taking the territory, it was thereafter called Achaëa. According to tradition (Pausanias vii.1.7), the Achaeans attacked under the leadership of Tisamenus, son of Orestes. Tisamenus fell in battle, but the Ionians were defeated and fled to Helice, which was besieged and surrendered. Down to the time of its catastrophe, Helice remained the chief town of the area.

Helice was the center of the cult of Heliconian Poseidon, a cult which the Ionians took with them when they settled in Asia Minor. There they sacrificed to Heliconian Poseidon during the great federal Pan-Ionian assembly at Priene. This is understandable when we remember that Priene was colonized from Helice (Strabo xiii.7.2). Another colony of Helice was Sybaris, in southern Italy (Strabo vi.1.13).

A few months before the disaster the Ionians sent envoys from Asia Minor to Helice to ask, in accordance with an oracle, for the old statue of Poseidon. They did

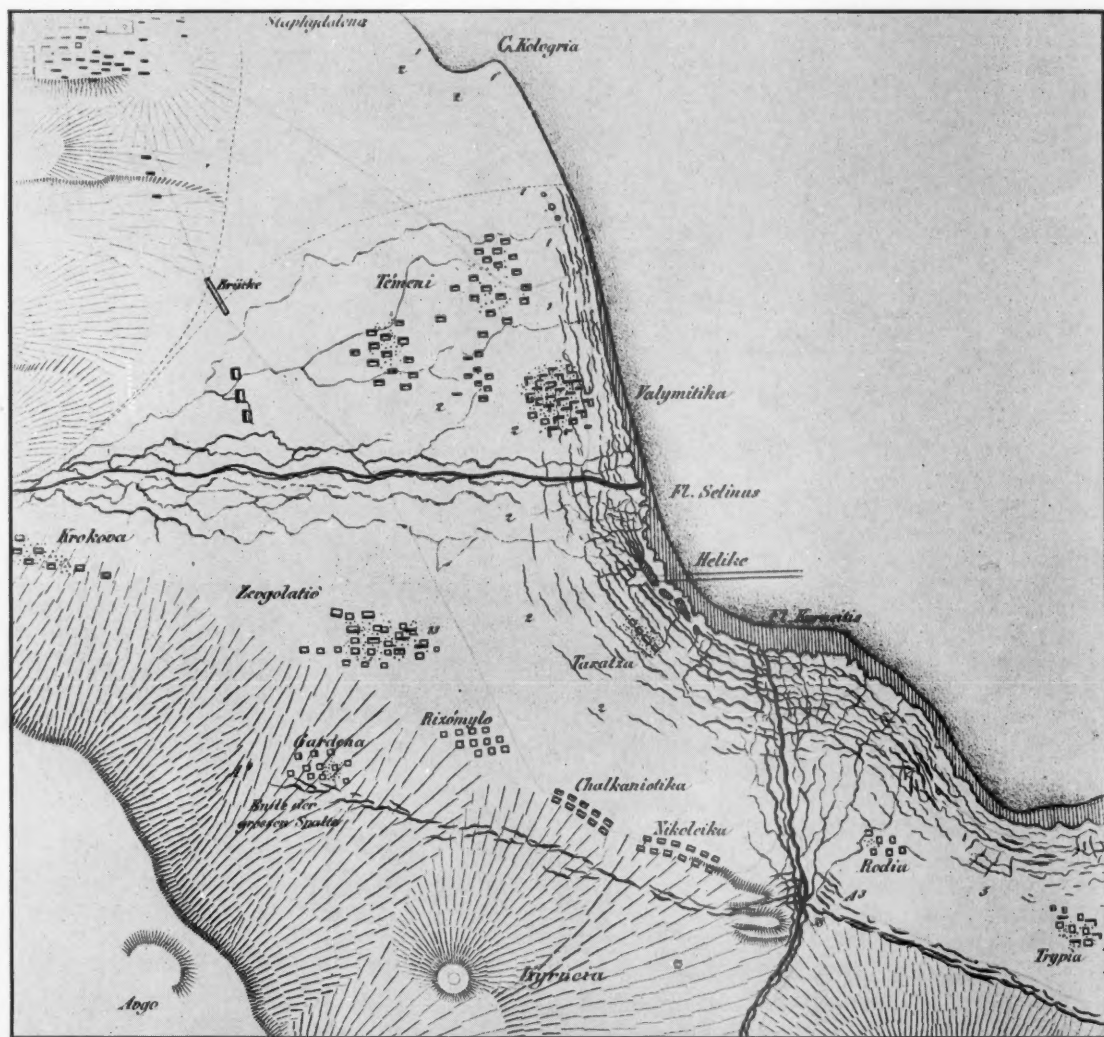
not really hope for such a concession, and would have been satisfied to have the exact dimensions and models of the temple and altar of Poseidon, but the Heliceans not only refused their request but maltreated or even murdered the envoys. Poseidon was infuriated, and as he was master both of the sea and of earthquakes, the result of his wrath was not long delayed. Helice, through a really terrifying combination of both natural forces, became "invisible to later people."

IT IS STILL INVISIBLE, but certain observations can be made about its location:

1) Helice is now completely covered, and no trace exists, on the surface of the earth or on the bottom of the sea, which might help to determine the location of the town. Aerial photographs reveal nothing. Mud on the

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SPYRIDON N. MARINATOS holds the M.A. and Ph.D. degrees from the University of Athens and he made further studies in Berlin and Halle, Germany. Professor of Archaeology at the University of Athens since 1939, he has also been Director of the Museum and Antiquities of Crete and Head of the Antiquities Service of Greece. His special field is Minoan and Mycenaean archaeology; his principal excavations have been made at various sites in Crete and at Thermopylae, Cephallenia and Pylos. During the academic year 1959-60 he was a member of the Institute for Advanced Study at Princeton, where he wrote the present paper.



Map of the district of Helice at the time of the earthquake of December 26, 1861, showing the strip of land along the shore which sank after the earthquake, the remaining plain, full of cracks parallel to the shoreline, and the great crack which separated the plain from the foot of the mountains. From Schmidt, *Studien über Erdbeben*, Plate IV.

## Helice continued

sea bottom and vineyards on the coast are both factors unfavorable for aerial inspection.

2) The remains of Helice must lie between the mouths of the two rivers, Selinus and Cerynites; the course of the former was a little more to the north in antiquity. Fortunately, the present distance between the river mouths is not great. About half a mile of the present shore includes all the likely locations for the town.

3) There exists a strong possibility, as we shall see, that Helice is now again under dry land and no longer below the sea.

Pausanias describes the circumstances of Helice's disappearance in more detail than do other writers, but not altogether clearly—one must remember that no eyewitness survived the disaster. According to his description, an earthquake "made invisible" not only the town but even the ground on which it stood (vii.24.6). Because the details follow after a long account of the signs preceding earthquakes and the various kinds of earth shocks, Pausanias later modifies his first statement as follows (vii.24.12):

"The sea invaded much of their land and encircled the whole town of Helice all round; and, moreover, the tide so covered the grove of Poseidon that only the tops of the trees remained visible. Then, with a sudden earthquake and the invasion of the sea that accompanied it, the tidal wave swallowed up Helice and every man in it."

My translation differs from those of Frazer and of Jones (*Loeb Classical Library*) in the crucial words: ἐπῆλθεν ἡ θάλασσα καὶ τὴν Ἑλίκην περιέλαβεν ἐν κύκλῳ πᾶσαν. If Pausanias's sources are sound, interesting conclusions may be drawn both as to the town and its catastrophe. The general belief is that Helice stood completely in the plain, a situation so unusual for a Greek town—especially in this case, where the heights are nearby—that it has made difficulties for more than one scholar. According to Pausanias's description, however, the town stood above the surrounding plain on a small elevation fifty or more feet high, the result of the deposition of earth by torrents in geological times. Hence the trees of the grove of Poseidon, which surely grew in the plain, were almost covered by the tide, but not the town itself, since it stood on the height, apparently surrounded by walls. This explains another fact: that the Ionians, when overcome by the Achaeans, fled to Helice, where they were besieged. No siege is understandable without walls; we can only suppose that Helice was founded according to the Mycenaean and not the Greek rule—that is, not very near the shore and not on a high hill. The Mycenaean strongholds of Gla, Mycenae, Tiryns, Argos,

Athens, etc., were similarly placed, regardless of higher hills quite near them which surely would have been preferred in the Classical period.

Thus we have, according to Pausanias's sources, three stages of the disaster, one following close upon the other: 1) the tidal wave which surrounded the town with water, 2) the earthquake which destroyed Helice to the last building and 3) the inrush of water which took the town and a great part of the plain to the bottom. Pausanias and all the other writers agree that it was the earthquake which buried the inhabitants and destroyed the town. As we mortals die once only, a different translation of Pausanias would mean that the preliminary tide covered the whole town, but in this case the inhabitants would have been drowned and not buried; the earthquake would have destroyed a dead town with a drowned population. Many of the dead would have risen to the surface and been picked up by the Achaeans for burial. Only an earthquake's covering the inhabitants with heavy ruins, and the immediate sinking of everything at once would explain our sources, which state that no one survived and no dead were found.

Aelian, a contemporary of Pausanias, mentions (*Historia animalium* xi.19) first the earthquake and then the tidal wave, which is in accordance with the events described by Pausanias, supposing that one disaster followed immediately upon the other. Impossible is the alternative mentioned by Diodorus (xv.48), that the earthquake occurred in the night and the tide followed at daybreak. No earthquake could kill all the souls in a large town. The greater part of them would have survived and fled, just as they did at Bura, another city on the Achaean coast, which suffered destruction at the same time.

THE ONLY ATTEMPT TO UNDERSTAND in modern scientific terms what happened in Helice and the surroundings was made by Julius Schmidt, the famous astronomer who was the first director of the observatory at Athens (J. F. Julius Schmidt, *Studien über Erdbeben* [Leipzig 1875] 68 ff.). The mountains which lie just beyond the coastal strip, above Helice and Bura, have a fairly steep subterranean foundation (over 1:3) of solid rock falling to the Corinthian Gulf. The three streams (from west to east, Selinus, Cerynites and Buraicus) accumulated upon this slope much fertile but treacherous alluvial material. At a given moment the stability of the accumulation was weakened; then came the earthquake, and the soil slipped into the sea. The tide must have added a considerable load, thus facilitating and intensifying the slipping. This phenomenon was repeated, in exactly the same place though to a lesser degree, during the earthquake of December 26, 1861, which was studied by

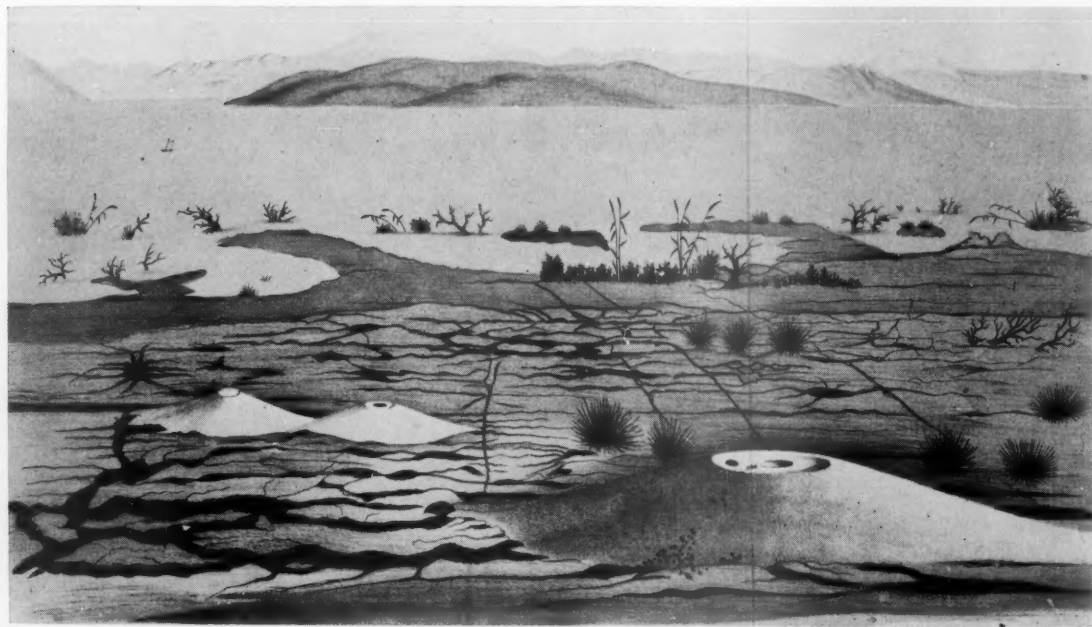
## Helice continued

Schmidt. Again the soil slipped to the northeast (toward the sea) in the following way: a crack about eight miles long and six feet wide appeared in the earth along the foot of the mountain. A strip of plain 325-425 feet broad disappeared *slowly* under the sea along the whole eight-mile length, while the remaining part of the plain sank about six feet and showed many minor cracks or small chasms. The tops of reeds and of almond and olive trees were visible for many days above the surface of the sea along the sunken strip of coast.

All these facts are very illuminating for the catastrophe of 373, which is estimated to have been ten times as great. At that period the plain was two and a half to three miles wide. Helice stood somewhere between the foot of the mountains and the sea. The strip of ground which disappeared under the waves must have been even longer than the eight-mile strip of 1861, and it extended not to the west (Aegium did not suffer any effects from the disaster) but to the east or, rather, the southeast. It is stated that along with Helice sank not only the town of Bura (the sources for this include Ephoros, who was contemporary with the event, and Strabo, who says three times that Bura sank in a chasm) but Aegeira as well.

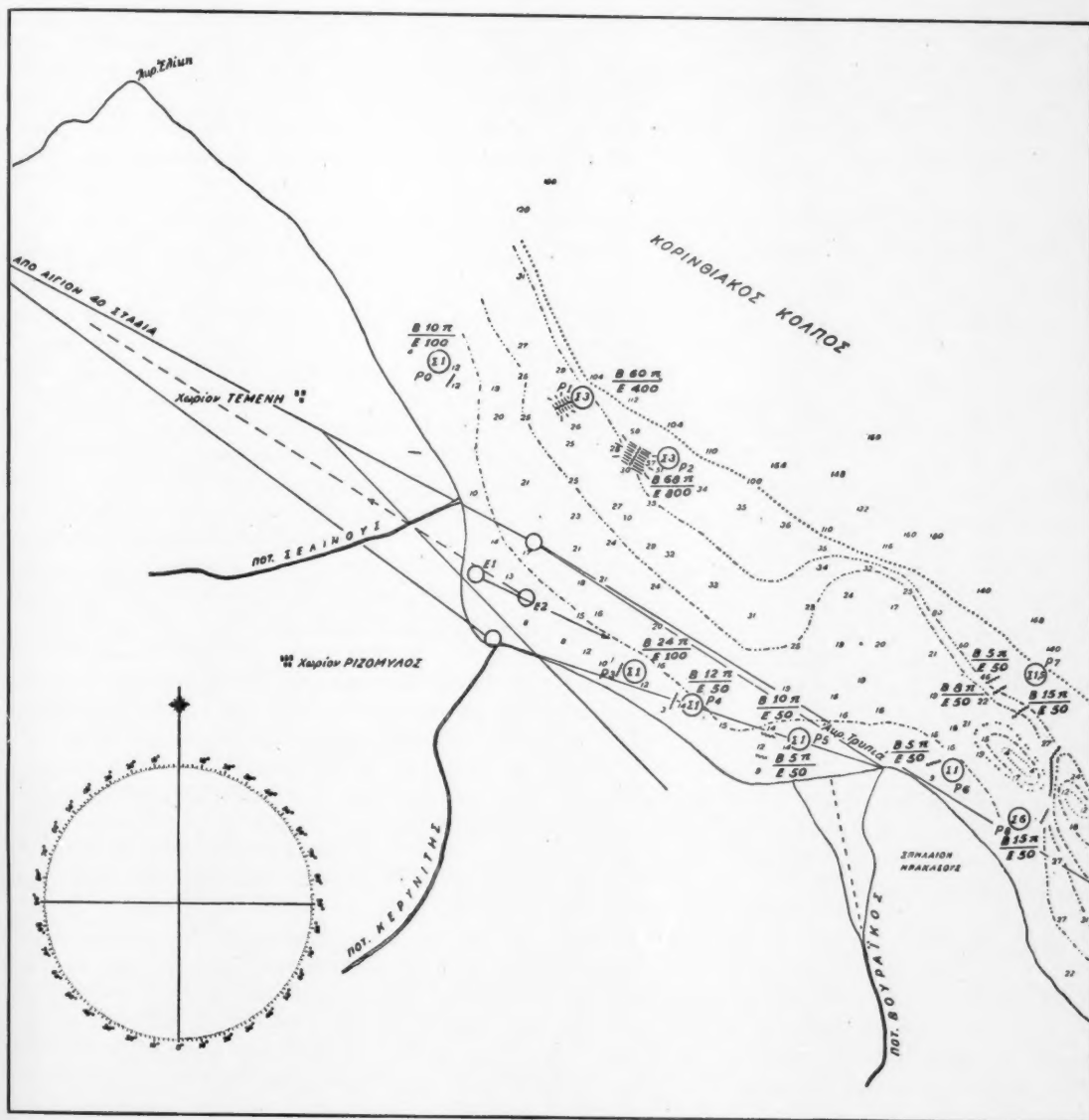
The latter, which lies about fifteen miles southeast of Helice, is mentioned by Philo. In any case, it is clear that these statements, though based upon fact, are not exact, since both Bura and Aegeira lay inland, high on the flank of the mountain. Bura, being very near Helice, was completely destroyed by the earthquake, but enough of the inhabitants survived to rebuild it (according to Pausanias the survivors had been "out of town"). I see but one possibility: both cities surely possessed little harbor-towns which of course were submerged, and the event was later transferred to the main towns. We know from Pausanias that Aegeira possessed a harbor-town of the same name, while for Bura he mentions only the road descending from the town to the shore (vii.25-26).

If we prefer the observations of Schmidt to the description of Pausanias, we must reconstruct the events of 373 as follows: 1) The earthquake destroyed the town and at the same time the ground began to slip *slowly*. This is corroborated by Pausanias's statement that the tops of the trees in Helice remained visible, then disappeared. Therefore Pausanias's description still holds, but with some confusion as to the chronological succession of events. The tidal wave he mentioned must have occurred, but as a result of the earthquake, and it was temporary and independent of the sinking of the soil,



A drawing showing the tops of trees in the submerged strip of the plain in the area of Helice as they were a month after the earthquake of 1861. In the foreground, the remaining part of the plain, full of cracks and sand-craters. In the far distance, across the Gulf of Corinth, Mt. Parnassus (left) and Mt. Helicon (right). From Schmidt, Plate III.







Bronze coin of Helice (Berlin 27611), enlarged. Photograph courtesy of the Staatliche Museen zu Berlin and Dr. H.B. Jessen.

## Helice continued

just as in 1861. 2) The sinking continued slowly until the highest tree tops disappeared, but it stopped when the remains of Helice were still in shallow waters, so that they were visible for five centuries or more. 3) The ground showed numerous cracks similar to those observed by Schmidt in 1861, but much larger and deeper.

IN STARTING TO SEARCH FOR HELICE we have a few indications to help us. Perhaps the most interesting possibility is that Helice may now be again under solid ground. The peasants have assured me that from time to time they have found tombs on the present right bank of the Selinus River. Therefore the town must have been not far from this point. Of equal interest is the fact, mentioned by the owners of fields near the shore, that the shore line is changing rapidly and that much new land is added yearly. I was shown vineyards which "a few years ago" were quite near the beach, while now they lie about three hundred feet inland. This may be of great importance. If we assume that the shore line is extended three feet yearly by alluvial deposit, we have, during the 2333 years elapsed since Helice sank, just a bit more than the twelve stades (7284 feet) which, according to Heracleides (Strabo viii.7.2), separated Helice from the shore. Of course we have no way of calculating the accumulation, which must be different each year. In any case, we are justified in supposing that in ancient times, when the water near the shore was shallower, earth accumulated more quickly than today when the water is deeper. We may therefore conclude that if it sank perpendicularly (see below), Helice may lie under the plain, whether near the shore or farther inland.

Professor Dontas of the Hydrobiological Institute of Athens investigated the sea-bottom at Helice and reported chasms at the bottom of the sea. These are now clear in the light of Schmidt's observations. They must once have been in the plain, which sank along with Helice. The chart of the sea-bottom which is reproduced

**Author's Note:** For more than twenty years I have been working on submarine research in Hellenic waters. I feel it desirable to note here some of my efforts. The first attempt (in 1938-39) was to attract the interest of the staff of the American excavations at the Athenian Agora. Mr. Adossides, then their legal counselor, became an ardent supporter of the idea. Unfortunately neither he nor Dr. Shear, Director of the excavations, survived the Second World War. At the same time I spoke to Stanley Casson, who promised to promote the idea. He too perished, at the beginning of the war, but he had already written "Submarine Researches in Greece" (*Antiquity* 13 [1939] pages 80-86). I spoke many times with Professor Karo, who was at that time in Athens, about the possibility of ob-

from Prof. Dontas's paper seems to be accurate; it was compiled in September 1951 with the help of the Bendix sound-apparatus on board the S.S. *Alcyone*. Specialists may explain it in detail; it is enough to mention here that the line of 100-fathom depth has surely remained constant since ancient times and that close to it runs the parallel 35-fathom line. Helice lies buried to the landward side of these two lines. The shore, less than 1½ miles from the town at the time of the catastrophe, must have been a considerable distance from the 100-fathom depth, as a shore bounding a plain cannot drop so sharply. But let us suppose that the shore did lie fairly near the 100-fathom depth, say on the closely parallel 35-fathom line. If we measure twelve stades as the crow flies from the 35-fathom line to the present shore, we find ourselves deep in the fields, almost one thousand feet inland. Helice would lie around this point, if it had sunk perpendicularly, but we must assume that it slipped somewhat to the north or northeast, though probably not far. Even if we assume a movement of half a mile toward the sea, Helice may still lie today either just inland from the present shore or in the water close to the shore, which is from eight to fifteen fathoms deep.

Our problem now seems somewhat clearer. The question is a technical one: whether it is possible, with modern methods and equipment, to conduct an archaeological investigation under water, for even if Helice is under the land, there is no doubt that the ruins lie quite deep and below the water table. Owing to the extreme transparency of Mediterranean waters, the submarine ruins mentioned by various writers and the erect statue of Poseidon could have been visible at a depth of 30-35 feet. We now have to add about ten feet more, because of hydrogeological changes which have made the sea level correspondingly higher. We should then, under the most unfavorable conditions, expect to find the ruins of Helice some fifty feet below the present sea level. However, the higher points of the town, seen by Pausanias in the second century A.D., stood, it seems, in considerably shallower waters.

taining improved diving equipment, then being used in Germany. The expense was great and nothing could be done, as I did not succeed in interesting the Ministry of the Navy, the only agency which could have purchased the apparatus. (Cf. Karo in *ARCHAEOLOGY* 1 [1948] 179; Marinatos in *Archaeologischer Anzeiger* 1937, 229.)

After the war my efforts began with the late Professor Demangel, Director of the French Archaeological School at Athens, who discussed the possibility of some French amateur divers diving at Artemision. I suggested avoiding these dangerous deep waters (the divers had only light equipment) and I warmly recommended Helice. Demangel followed my suggestion, but he told me that when the divers set to work the

mud darkened the waters at their least movement, so that it was impossible to do anything. The plan of investigating Helice, however, seemed to him very interesting, and he published his experiences in *Bulletin de Correspondance Hellénique* 74 [1950] 271-273, and elsewhere. Moreover, he had Professor Sp. Dontas, then president of the Hydrobiological Institute of the Academy of Athens, make an investigation of the seabottom at Helice. The results were published in the *Praktika of the Academy of Athens* (27 [1952] 90-101). In all these papers is expressed the wish for a systematic investigation, but since Schmidt's time only Dontas has undertaken to locate the town. Here we have made an effort to present the whole question, including both favorable and unfavorable aspects.

IN A.D. 79 Vesuvius buried Pompeii, Herculaneum and Stabiae. Since the danger was realized in time, the inhabitants could not only escape but carry off precious objects and much of their property. In 373 B.C. the catastrophe was instantaneous. Here also three towns perished. In the case of Helice, not a single soul escaped. Everything living as well as everything belonging to the living now lies under the ruins. It was, moreover, a period different from that of Pompeii—it was still the Golden Age of Hellas. Socrates and Aristophanes had died at the beginning of the century, but one could still hear Plato teaching. The older Cephisodotus and Praxiteles, already renowned, were carving sculptural masterpieces; Scopas was in his best period.

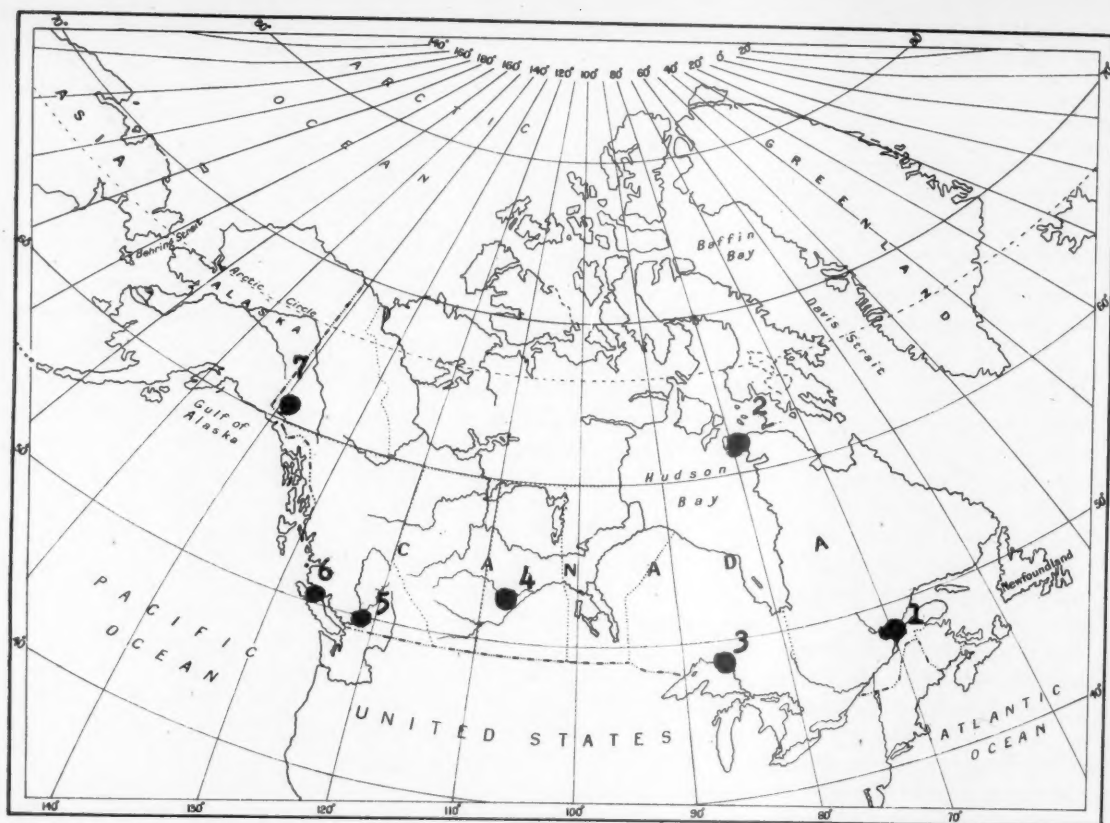
Helice was a very old town, with traditions harking back to the heroic Mycenaean Age. It had a famous sanctuary, great religious prestige and an important position as a political center. It is certain that in the sanctuary of Pan-Ionian Poseidon, in the market and in other parts of the town, treaties, decrees and dedications were deposited. Works of art surely existed in all the sanctuaries, in the agora and in other sections of the town. With the excavation of Helice a great new light would be shed on both public and private life during the best period of Classical Greece.

The ideal solution would be, of course, to reveal the whole town, perhaps still surrounded by its walls, and to insure its protection from the water. Then it could be restored like Pompeii. This, if possible at all, presupposes a great financial organization, able not only to unearth the ruins but to maintain them in waterproof condition.

There is, however, a second possibility, certainly not the ideal one but less visionary. This is to try to find the agora and the sanctuary, in order to rescue as many art treasures as possible. One may reasonably hope to bring to light architectural material, including pedimental sculptures. Marble and bronze statues are certain to be found. Perhaps for the first time we would have in our hands authentic cult statues. Apart from Poseidon's sanc-

tuary, nobody knows how many temples there were, how many sanctuaries and stoas, and how many dozens of statues and other dedications adorned them. While Pausanias could not dive, he could describe the other Achaean towns, all inferior to Helice. Its neighbor, Aegium, which supplanted Helice as an assembly place, was never a particularly eminent Achaean town, yet Pausanias saw in it numerous temples, sanctuaries and a stoa. Mentioning only some of the works of art he saw, he lists twenty statues, twelve of marble and eight of bronze. Only three of these are surely later than 373 B.C. (works of Damophon), while on the other hand a bronze Zeus and a bronze Heracles were the works of the famous artist Ageladas of Argos. It would be unjustified pessimism to doubt that Helice contained many times more treasures than Aegium and that the works of the greatest artists may appear there. It is well known that many towns represented on their coins the precious statues which they possessed. From Helice only two bronze coins survive, of a single type. They show a wonderful head of Poseidon (surely of the fifth century) and, as Weil wrote (*Zeitschrift für Numismatik* 7 [1880] 365 and plate 8, 6), the head has no analogy except the Poseidon of Phidias on the east frieze of the Parthenon. Did the Heliceans order a cult statue to Poseidon made by Phidias himself?

One may note further that the circumstances at Helice seem to be ideal for the preservation of sculpture. It is a recognized fact that bronze works are better preserved in the sea than underground; on the other hand, the surface of marble statues is pitted by sea shells called *lithodomi* and *follades*. They would be sheltered against these moths of the sea if they were covered in time by a thin layer of mud, and this is the case here. Helice was not a ship sunk on a rocky bottom, such as that found at Antikythera. Helice's treasures were buried under its ruined buildings, and then at once the rivers did their best to cover them completely. Now may a happy combination of science and technical skill restore the unhappy town to life!




MAP SHOWING LOCATION OF ARCHAEOLOGICAL PROJECTS OF THE NATIONAL MUSEUM OF CANADA, 1959

# ARCHAEOLOGICAL PROJECTS IN CANADA 1959

By Richard S. MacNeish  
Senior Archaeologist, National Museum of Canada





CANADA IS A VAST COUNTRY as yet little touched by archaeological exploration. Some cultural areas have been defined; in a few sections of the country preliminary survey and excavation have shown a little about the kind of material that exists. For the most part, however, our knowledge is so limited that even the problems of each area are as yet not well defined. Moreover, even in areas where preliminary survey and excavation have been carried out, little attempt has yet been made to obtain the stratigraphic sequences necessary for building a chronological framework or to coordinate the efforts made by various institutions and individuals. Certainly a major problem is to achieve some sort of co-ordination and cooperation. Another primary problem facing Canada is that of archaeological personnel. No one institution has sufficient staff or funds to cover the whole country; many of the provinces have no one at all. Although archaeology is taught in the universities, the number of trained archaeologists and the opportunities for training are inadequate. Salary scales do not encourage a flow of first-rate specialists. The National Museum is the only institution with a nation-wide scope and the one best suited—perhaps the only one expected—to provide the necessary co-ordination and leadership for solving the problems of Canadian archaeology. Our present program is but a preliminary attempt to solve some of them and to put Canadian prehistory on a firmer basis.

During the field season of 1959 (roughly June-September) the National Museum participated in seven field projects covering a fair geographical range (see accompanying map). In describing the projects I shall go from east to west.

THE QUEBEC NORTH SHORE PROJECT (No. 1) was originally scheduled to take place on Anticosti Island, but owing to circumstances beyond our control, the work was actually done mainly around Tadoussac (at the mouth of the Saguenay River) along the north shore of the St. Lawrence River. In charge was Mr. Gordon Lowther of McGill University, working on behalf of the National Museum. In the main, the project consisted of surface collecting, with minor excavations. The problem in this area had been previously defined by Dr. Speck and Mr. Wintemberg, who had made some excavations and had collected some very peculiar large quartzite materials from this area. Some of the artifacts were quite primitive, while others appeared to belong to the eastern Archaic culture. Also in this area was a series of extinct Champlain Sea beaches.

The questions were: how do these materials connect with the eastern Archaic—are they earlier, later, or just a local variant? Do all these different artifacts, covering

a very wide range, represent a single culture or a series of cultures? If they are a series of cultures, how do they connect with the various geological features such as the ocean beaches and terraces? Mr. Lowther attempted to solve these problems, and collected about three thousand artifacts on the actual beaches. He may be able to make ecological correlations of these cultures and beaches by further study. He certainly determined that there was an early culture and a later, Archaic culture. The early culture is quite distinct, unlike Archaic assemblages that occur in the Eastern United States, and is characterized by large scrapers, scraping planes, choppers, un-notched and un-stemmed projectile points. The later quartzite assemblage has notched and stemmed projectile points, small scraping adzes and celts, and, though it shows obvious continuity from the earlier level in its cruder bi-face blades, seems to belong to the eastern Archaic. Mr. Lowther is now attempting to correlate these materials with those from excavations that have been carried out in the maritime area.

Besides this study and the partial solving of the archaeological problems of the Tadoussac high beaches, he got an added bonus, for in the lowest beach he found definite evidence of a documented historic Algonquin tribal site. This is the first discovery in this area of the actual material culture of one of the Algonquin tribes that was living along the St. Lawrence River when Europeans arrived, and this will be a starting point for tracing back the cultural history of an Algonquin tribe in the area. Interestingly enough, the ceramics of this Algonquin group are similar (though not identical) to what is normally called Onondaga-Oneida Iroquois in central New York. A study of the differences between this Algonquin culture and that of the Iroquois will be most significant. It should do much toward laying that theoretical ghost that the Woodland cultures are Algonquin, the Iroquois cultures Upper Mississippi.

THE UNGAVA PROJECT (No. 2) took place in the general area between Ivugivik and Mansel Island on the northernmost tip of the Ungava Peninsula. Here Mr. William Taylor of the National Museum of Canada continued his northern Ungava research. The problem is one that has plagued archaeologists for a number of years, that is, the origin of the Dorset culture and the problem of what came before it—in other words, the real parent of Dorset.

Mr. Taylor's test excavations and surface collections netted about three thousand artifacts. Many of these are from seven Dorset sites. However, there is a large proportion from five pre-Dorset sites which belong in the Arctic Small Tool tradition and show definite evidence of being ancestral to the Dorset cultural remains. Thus

## Projects in Canada continued

our Arctic Small Tool tradition, which from Alaska to Greenland has been dated as 3500 to 6000 years old, has at last been found in the Ungava Peninsula, and we now have good evidence to show that it is the ancestor to Dorset (though Dorset received later Eskimo or Inuk influences). This is a major break-through in the prehistory of Eastern Arctic archaeology. Further work should continue in the area; however, it will not any longer be a major battle but rather in the nature of a long-sustained mopping-up operation.

PROJECT 3 WAS ON THE NORTH SHORE of Lake Superior, not far from Marathon, Ontario. Dr. J. Norman Emerson of the University of Toronto was in charge, working in cooperation with the National Museum, which was represented by Mr. Richard Pearson. They were mainly interested in a series of mysterious prehistoric pits—called Puckasaw pits—that appeared on one of the high extinct beaches. Who made these and how old they were was the problem. Careful excavation of a number of these pits revealed that they contained pottery of relatively late type, and that they were probably connected with some sort of a ceremonial vision quest of the Ojibway (Algonquins) in this area.

Not far from the pits, at the mouth of the Pick River, they found a definite Ojibway village. Here again was a chance to determine the material of the Ojibway group of historic times, and with this data we shall be able to trace the actual history of the Ojibway. As an extra bonus here, the excavators also found on a very much higher beach, between the Lake Nipissing beaches and the Lake Algonquin beaches, a tool of the Old Copper culture, which is known from farther west on Lake Superior and has been dated as from 4000 to 7000 years old. Thus, here again we have a mass of new data from an unknown area in Ontario. However, a great deal more work needs to be done, particularly in the part of Ontario from Parry Sound to near Sault Ste. Marie, and westward toward the Manitoba border.

PROJECT 4 WAS NEAR ELBOW, Saskatchewan, in the area that will be flooded by the Saskatchewan Dam now under construction. Here Dr. William Mayer-Oakes, then of the University of Toronto, conducted the project for the National Museum. Mr. Pohorecky and Dr. Kehoe represented the Province of Saskatchewan in this cooperative endeavor. Basically, there was no well defined archaeological problem here. It was a race against time and expanding modern industry to rescue the archaeological and historical material that is to be buried when the waters rise, upon the dam's completion. The project

was extremely well organized and carefully done, and over 180 archaeological sites or remains of ancient inhabitants were uncovered. The whole area was blocked out into units and many of them were surveyed. Dr. Mayer-Oakes considers that probably fifty per cent of the whole area has been thoroughly covered.

Three areas are particularly promising. One had a number of Plainview-type projectile points that have been dated between 6000 and 9000 years old. The site, of course, should be dug before the waters of the artificial lake rise. Another has a number of points of Agate Basin type, which is only slightly more recent. Near the town of Elbow itself, at the mouth of Aiktow Creek, a whole series of sites was found, and there is good evidence that stratigraphic sequences will be found here. These sites seem to date as far back as 3000 or 4000 B.C. and continue to historic times. The results of excavation in this last section could be the basis for an informative archaeological sequence for the area. All in all, in spite of the hugeness of the region and the lack of any previous work done, the project was remarkably successful. The work should certainly be continued until the day the water covers the area. Not only should there be more surveying, but at least these three important areas should be adequately excavated.

A section in an extinct beach at Tadoussac, Quebec (Project 1). The marker shows the place where artifacts were found, in an old humus layer representing the original surface. The sand above that layer was re-deposited by wind action.



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Saveejuk of Ivugivik examining a cobble concentration and one of many find spots on the Arnapiik site. This site has an early pre-Dorset occupation at an elevation of about 100 feet above sea level, on the east coast of Mansel Island, Northwest Territory. Ca. 1500 B.C.

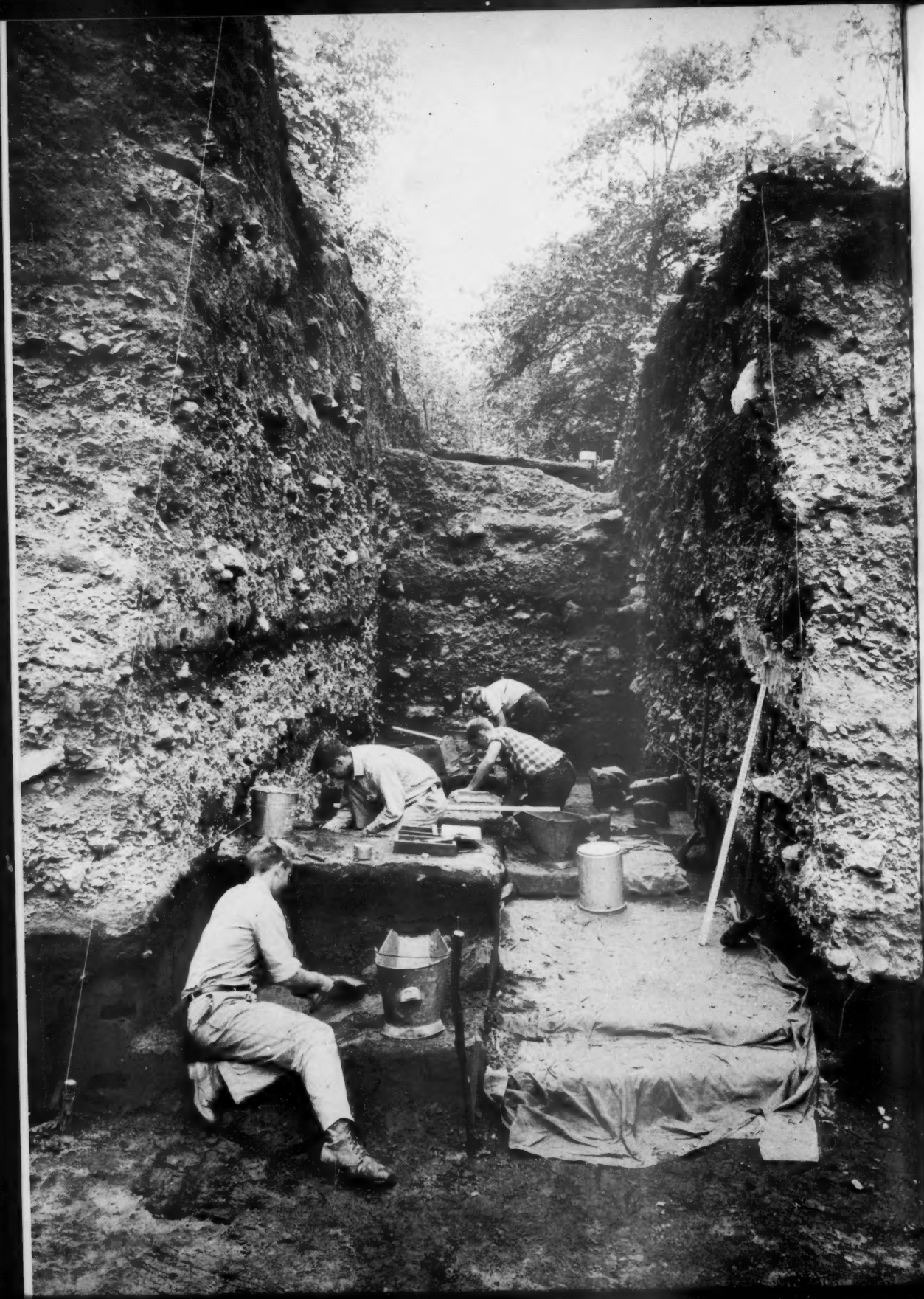


Culture layers in early Dorset stratified site on Sugluk Island, Hudson Strait (Project 2). Ca. 500 B.C.



Central floor area with hearth (position marked by trowel) of a semi-subterranean house in a late Dorset village on Sugluk Island, Hudson Strait. Ca. A.D. 1300.





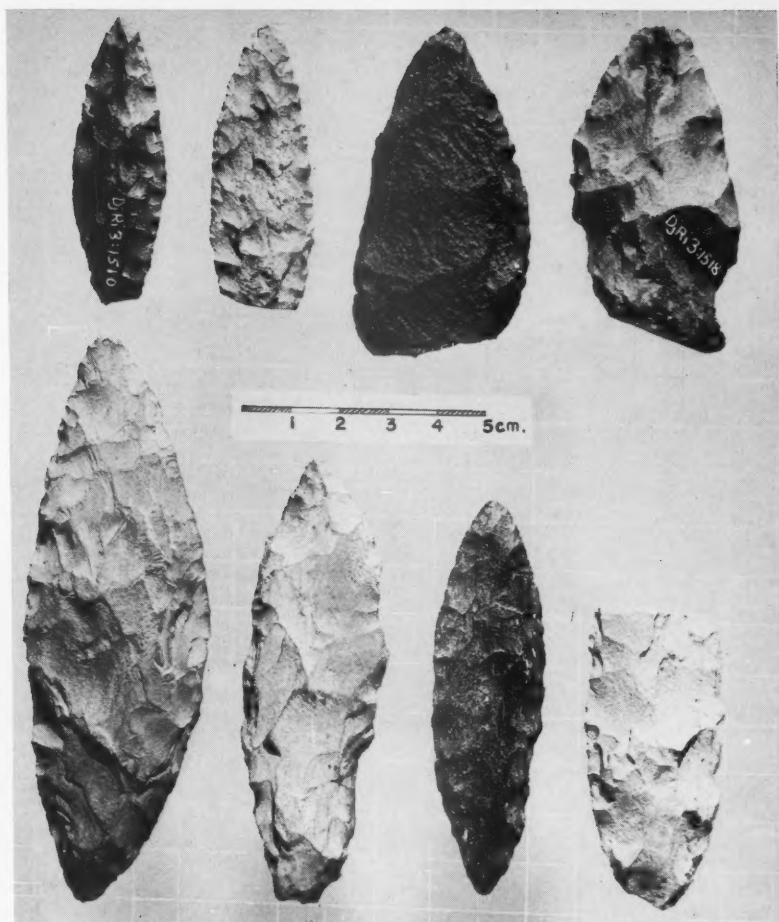
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## Projects in Canada

continued



The oldest known knives and projectile points from western Canada. Top row from level "E," bottom row from level "G" of site DjRi 3, Fraser Canyon, B.C. The Carbon 14 dates of these occupations are  $7350 \pm 150$  and  $8150 \pm 310$  B.P. respectively.

THE FIFTH PROJECT, called the Fraser Canyon Expedition, was located near Yale, British Columbia. Dr. Borden of the University of British Columbia was the director, with funds provided by the National Museum. Here the basic problem had already been defined by Dr. Borden. He had discovered the site and noted its stratigraphy, and considered that it was very important. Here was a chance to get a good sequence. One of the layers of the site had been dated as at least 8100 years old, implying the presence of remains of Early Man and the type of tools that might represent early migrations through the Rocky Mountains. For these reasons the

### *Opposite page:*

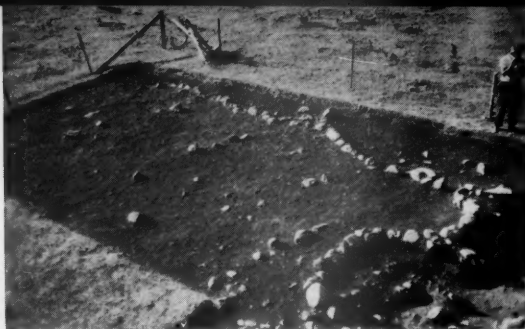
Work in progress at site DjRi 3, Fraser Canyon, British Columbia (Project 5). In this excellent view of field work the digging is at the level of  $8150 \pm 310$  B.P.

National Museum gave material assistance for the excavation of this site.

In scale Dr. Borden's excavation was most impressive, worthy of Mexico and the Near East. It was a 10 x 50-foot trench which went to a depth of 20 feet and in a few places 25 feet, with at least ten distinct soil zones in it. The results were particularly encouraging. Soil Zone A, from which Dr. Borden obtained about 1200 artifacts, seems to date about A.D. 1000 and to be ancestral to the culture of the recent Indians of the region. Zone C had more artifacts and a little ground slate in it, and seemed to be ancestral to Zone A. Zone E contained an abundance of crude knives and choppers like those from other Early Man sites. Zone G was dated by Carbon 14 tests as definitely older than 8100 years ago; the artifacts consisted of choppers, crude scrapers and a few



The Tsolum River mound site (DkSg-1), Comox Valley, Vancouver Island (Project 6). *Left:* Rock border outline found beneath three-foot-high dirt and stone mound. *Right above:* Tail appendage to same rock outline.



*Right:* Vertical profile showing the four strata having four different cultural remains in each, at the Little Arm site in the Southwest Yukon. At end of trench Mr. W. Baker, an Ottawa high school student, is removing fine micro-blades from lowest stratum.

## Projects in Canada continued

projectile points. Below this Dr. Borden found Zone I, containing the remains of man, but lack of time and money prevented him from going farther. Here is a project that certainly must be continued. This is the first stratigraphy we have from the interior of southern British Columbia, an area we knew very little about until now, despite previous digging. Only by excavating will we understand the temporal-spatial significance of what has been previously uncovered in this area. We may also get quite a bit of data concerning the type of people who migrated through this area and went southward.

PROJECT 6 TOOK PLACE on Vancouver Island in British Columbia, under the direction of Miss Katherine Capes of the National Museum. Excavations and some minor survey took place from March through August. Basically, the problem was to establish the archaeological sequence in the area, and particularly to find out who had built a series of mounds near Courtenay which had been dated (or, rather, logs underneath them had been dated) as

about four thousand years old. The results were relatively encouraging. Not much was found out about the mounds; however, near them a midden was partially excavated and part of it was found to have definite remains of historic or late archaeological groups about which we do not know a great deal. Also, one area of the midden revealed two archaeological strata. It is believed that the next step for working in this zone is probably to survey and see if better, stratified, sites can be found and eventually excavated.

THE SEVENTH PROJECT took place in the southwestern Yukon and was under my direction. Here the problem was to establish an archaeological sequence by securing good stratigraphy. To the survey of 1957, which had netted ninety-seven sites, are now added about seven more, and we hope to be able to arrange all these in chronological order. A number of cultures in these sequences have definite Asiatic affiliations, and it was hoped that by excavation a much larger sample could be found for comparison with Asiatic materials to establish relationships. Furthermore, not only should the work in



Stripping the top occupation layer from a vertical profile, using the alternate-square technique. Kluane Lake, Yukon Territory (Project 7).

this area show us something about where the people came from but also, it is hoped, what happened to these early migrants from Asia.

Three stratified sites were excavated, one on Kluane Lake with four distinct cultures, one on top of the other, a second with one culture overlying the remains of another, and a third with twelve definite stratified floor levels that seemed to represent two cultures. From these came about two thousand artifacts, many of which belong to the Little Arm culture, from about 8000 years ago, which has many Asiatic resemblances. Overlying it was the Gladstone phase, dating perhaps 5000 years ago, which shows how this Asiatic culture gradually changed and readapted to the Boreal forest. The final culture, Teye Lake, which grew out of Gladstone, is a true prehistoric Canadian culture with few if any Asiatic traits; in other words, the transition to a Boreal forest culture has been made. In two of our sites later remains were found which seem to represent recent Indians and which also seem to have little connection with earlier remains of Asiatic type. Future work—since we have now a fairly good chronological framework—should concentrate

on securing much larger samples for each part of our sequence. A definite challenge is the problem of finding the ancestor culture of the modern Indians, as well as cultures earlier than Little Arm.

THUS THE 1959 ARCHAEOLOGICAL FIELD SEASON of the National Museum of Canada has accomplished a number of things: 1) it has been responsible for investigations of sites in many archaeologically unknown parts of Canada; 2) it has found new and rather amazing archaeological remains in each of these areas, and has told us something definite about Canadian prehistory and the sequence of culture in some parts of our country; 3) by cooperation among numerous institutions and universities, and by the hiring of assistants, much was done toward training Canadians and assisting Canadian universities in getting an archaeological program going; and 4) it represents the first comprehensive attempt to initiate a fairly well coordinated national archaeological program to attack and solve the problems of Canadian ancient history. We hope that the success of this season of joint effort may continue in the future.

By Brian A. Sparkes

# KOTTABOS:

MANY CAUSES HAVE BEEN PROPOSED for the war between Athens and Sparta which began in 431 B.C., some with more truth than others. One reason, which lacks truth but not humor, was proposed while the war was still in its first stages. Dicaeopolis, in Aristophanes' comedy, *The Acharnians*, suggests, in defence of his action of treating with Sparta, that the squabble arose not out of trade relations with the nearby town of Megara but out of relations of a different sort. Simaetha, the Megarian courtesan, was abducted by young Athenian bloods who were drunk that evening with playing *kottabos*, a fashionable game in Athenian society of the day. One cannot imagine an after-dinner game such as bridge producing violent results of this nature, and one is given

to wonder what exotic sport could play such havoc with the heads and hearts of these young Athenians.

The game was invented in Sicily, for the philosopher Critias tells us, "Kottabos is from the land of the Sikels"—not, however, a native pastime, for there is evidence to show that colonizers from the Peloponnesus invented it. This evidence is to be found on an Athenian red-figured *psykter*, or wine-cooler, which shows four courtesans, Smikra, Palaisto, Sekline, Agape—the Misses Slender, Tumbler, Couchy and Love. The lady with whom we are concerned is Smikra (Figure 1), who swings a cup round the index finger of her right hand. By her arm is written, "I am flinging this for you, Leagros." The dialect in which the words are written is significant: it is



1. Smikra, the courtesan, swings her cup and calls, "I am flinging this for you, Leagros." (Words are barely visible in picture.) An Athenian red-figured psykter by Euphronios, in Leningrad. Ca. 510 B.C. From Hopkin, *A Handbook of Red-Figured Vases* I, page 405.

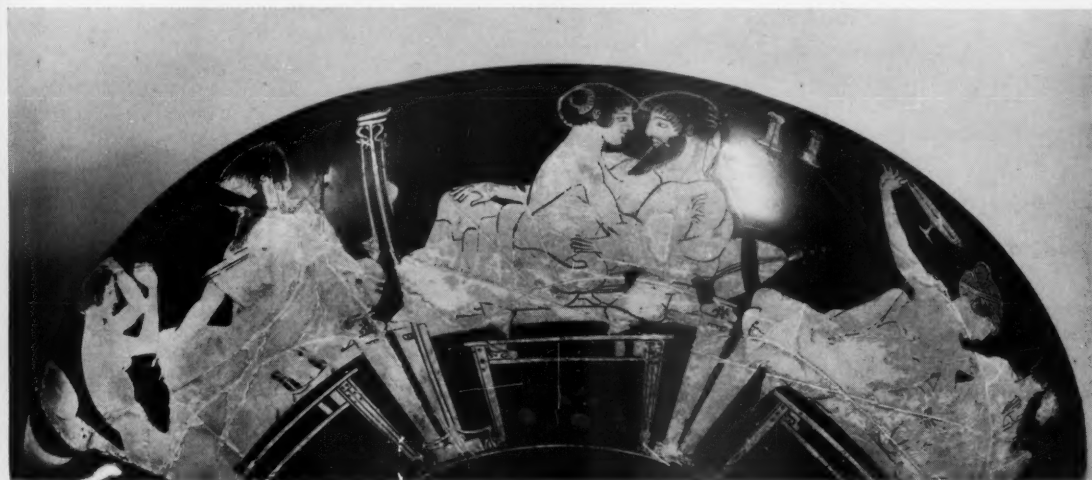


## AN ATHENIAN AFTER-DINNER GAME

Doric, that same dialect which the Sicilian colonizers spoke, and though no doubt Dorian courtesans were not unknown in Athens at the time, the words are best considered as a conscious attempt to retain the original character of the game.

The pastime of kottabos is mentioned early in Greek literature, for Alcaeus, at the beginning of the sixth century, writes of "wine drops flying from Teian cups." Though we have no means of knowing the details of the game in this early period (the artists of the time preferred depicting legend to mirroring private life), the essential element of the flying wine-lees is there. For kottabos consisted of throwing wine-lees at a target set in the midst of the diners' couches. This target was either

a long pole with a small disk balanced on the top or a large bowl. Fourth-century writers, and especially the comedians of that age, provide more eloquent testimony than that of Alcaeus. Antiphanes, in his play, *The Offspring of Aphrodite*, lays down the rules of play, and the red-figure vase-painters provide pictorial confirmation. One had to bend the fingers "as though playing the flute" and "to make them into the shape of a crab." The index finger was inserted into the handle of the drinking cup and "the palm of the right hand bent upwards." One must "not hold the hand stiffly" but one must throw the lees "with a rhythmic flow." If one wished to apply the strictest rules—and we see them applied in many of the representations—the player should lean on his left el-



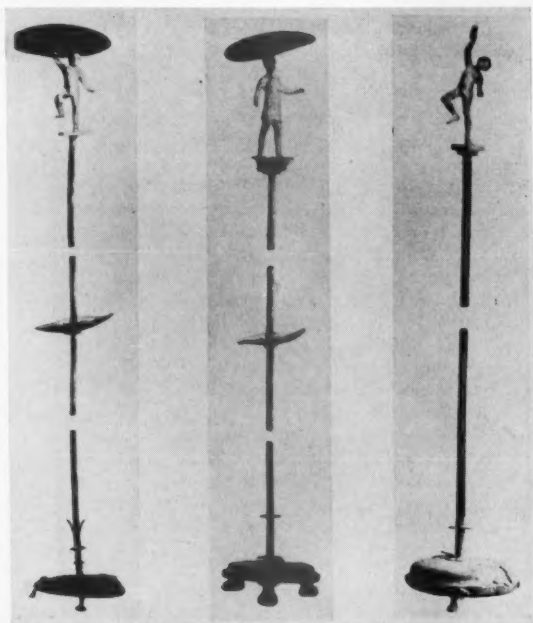
2. At a late-night party the lamp provides the guests with light enough. An Athenian red-figured cup by Makron, in New York. Ca. 490-480 B.C. Photograph courtesy of Metropolitan Museum of Art, Rogers Fund, 1920.



3. A solitary kottabos player tries his wrist at the throw; his servant's eyes are fixed on the plastinx. An Athenian red-figured *chous*, or jug, by the Phiale painter, in Berlin. Ca. 440 B.C.



5. Figure from top of kottabos stand, himself playing kottabos. Photographs courtesy Ashmolean Museum, Oxford.



4. These actual kottabos stands, unearthed in Perugia, are more elaborately fashioned than the ones represented in painting. From *Römische Mitteilungen* 57 (1942) 239.



## Kottabos continued

bow. If this sounds complicated in theory, one can see how natural it was when played by such an expert as Smikra. The wine-lees were to be flung upward, high into the air. The instructor in Antiphanes' comic scene gives the order, "Let fly," and the pupil, having received practical guidance in the throw, exclaims, "O Poseidon, as high as that—I wouldn't reach that distance with a slingshot!"

This fragment of Antiphanes is the basic literary evidence for the type of kottabos known as *kottabos kataktos*, or kottabos with a pole. It introduces us to the target of the throw, the first piece of information which the instructor offers being, "The lampstand is the kottabos." A red-figured cup by Makron (Figure 2) shows an evening party with a lampstand set by the couches. The lamp rests on the top of the stand, its flame indicated in added red. From the hooks beneath hang ladle and strainer. The lady on the right, though swinging her cup in the approved manner, seems more concerned with her bearded companion and is not aiming at the lampstand. There

does exist a contraption which differs from a lampstand in various respects but is sufficiently similar to give point to the instructor's comparison. This consists of a long rod with a large disk in the center and a small disk on top. Let us for a moment return to Antiphanes and the kottabos lesson. You let fly your wine-lees and endeavor to dislodge the *plastinx*. The pupil inquires about the *plastinx* and rightly guesses that it is "that tiny little disk balanced on top." An oinochoe by the Phiale painter (Figure 3) shows at the left a wreathed man seated and turned toward the center. He swings a cup in his right hand and gazes at a rod on the top of which is balanced a small disk. In the middle of the rod is a large curved disk seen in profile. Behind the stand is a pail and a jug, and at the right stands a wreathed servant with a ladle in his left hand, ready to fill his master's cup when the wine-lees have been cast.

To return again to the fragment of Antiphanes' play: "One has only to touch the *plastinx*," says the instructor, "and it will fall onto the *manes* with a very loud noise." Thus the purpose was not only to dislodge the *plastinx* but also to cause it to strike the *manes*; it is this latter term which has provoked the most disagreement among students of the game. At the mention of the word "manes," the pupil exclaims, "Heavens, has the kottabos a *manes* for it, like a house slave?" Now *Manes* was a Phrygian slave name, and nothing would be more natural than to attach the term "manes" to the small figure which is to be seen on actual kottabos stands found at Perugia, for on the point of the shaft of each stand a small figure is fashioned (Figure 4). The statuette sometimes holds up his arm or carries a cup aloft, providing the point on which the *plastinx* is set. Often the head of the figure provides the point, as in a charming small bronze in the Ashmolean Museum, Oxford (Figure 5). In this instance the rod is not preserved, but in size and shape the figure is suitable and is represented as playing kottabos. The wine-lees, flung high in the air, had to touch the *plastinx*, unbalance it and send it skimming down past the figurine.

There are, however, various reasons for suggesting that the identification of the figure as the *manes* is not correct. The *plastinx* is said to fall on the *manes*. One may allow that the *plastinx* could be said to fall onto the figure on which it rests. It would, however, only graze it, and what is needed, according to the instructor in the play, is a very loud noise. Moreover, the figure is never

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DR. BRIAN A. SPARKES is Assistant Lecturer in Classics at the University of Southampton, England. At present he is preparing for publication the Classical black-glazed pottery found in the excavations of the Athenian Agora, and an archaeological companion to fifth-century Athenian literature for the Oxford University Press.

## Kottabos continued

represented on vase-paintings. It might be objected that the painter is not concerned with such details, but the total absence of the figure is significant and the painter has concerned himself with other embellishments not strictly essential for the game. What is always represented is the large central disk, which is well situated for breaking the fall of the plastinx and also for producing the requisite noise. The comparison of the manes with the house slave in Antiphanes' comedy comes not from their physical similarity but from the "very loud noise" they both make when struck!

The earliest representation of a kottabos stand occurs on a red-figured cup belonging to the Severeano Group (Figure 6). The cup is unfortunately very fragmentary and a vital part is lost; the vertical line seen behind the player's feet is certainly the lower rod of the shaft. The motif of the kottabos thrower was a common one in Attic vase-painting; in the second half of the fifth century the artists of South Italy created a new motif—the balancing of the plastinx. The assistant could be male or female, more usually the latter. On a krater by the Amykos painter (Figure 7) a naked youth, plastinx held between index and middle finger, stretches up to set the disk in position. Another figure, the obese and simian satyr emptying the wine jar, removes the scene from the realm of everyday life to another world. On other vases gods are shown playing at kottabos, usually Dionysos with his attendants (Figure 8); the combination of a stereotyped motif and the presence of divinities indicates that the game was more popular in heaven than on earth, more common in the painter's studio than in the diner's banquet hall.

THE OTHER TYPE of kottabos mentioned by the comic dramatists was called "kottabos in a bowl" or "kottabos with dishes." The type has been confused with the previous one, and there are similarities. The flying wine-lees are still a feature of play but the target of the throw is not a stand but a bowl, or *lekane*. The *lekane* was filled with water, and empty *oxybapha*, or small dishes, were set floating on the water (Figure 9). The wine-lees were then thrown against the *oxybapha* in an attempt to sink them. The person who sank the most was proclaimed the winner.

The *lekane* was for household use and served many different purposes—mainly to hold foodstuffs but also doing duty as a wine-vat, a sick basin, a hod, a footbath. It is frequently represented on vases, and examples have been found in excavations. The dish, or *oxybaphon*, still defies identification, though many facts are known about it. As a unit of measure it was roughly equal to a coffee



6. This fragmentary cup shows the shaft of the kottabos stand behind the player's feet. A kylix in Adria belonging to the Severeano Group. Ca. 510 B.C. From *Corpus Vasorum Antiquorum* Adria 1, plate 3,3.



7. Party scene: wine, a flute girl, kottabos and Dionysos himself (at extreme left) with his attendant satyrs. A South Italian volute krater by the Amykos painter, in Bari. Ca. 410 B.C. From Trendall, *Frühitaliotische Vasen*, plate 10 a.

cup. Its shape must have been that of a saucer, as it could float. The name *oxybaphon* is inscribed on a number of vases but usually as one of a batch of items scratched either under the foot or on broken fragments. These batches are most likely shopping lists and bear little, if any, relation to the vases on which they are scratched. So we cannot claim to identify *oxybaphon* simply by the appearance of its name inscribed on a vase.

No certain representations of this type of game are known. This need not surprise us, as it would have been difficult to indicate on a red-figured vase the inside of a bowl with dishes floating in it. One vase has been cited as depicting the game (Figure 10). It shows a young girl swinging her cup. She faces a washstand in which sits a duck, beak raised, attracted by the twirling cup. A





8. Dionysos, on this occasion carrying his thyrsus, waits for the slave-girl to adjust the platinx before his throw. A Campanian bell-krater in Bologna. Fourth century B.C. From *Corpus Vasorum Antiquorum* Bologna 3, plate 3,5.



9. Lekane with dishes floating in it, showing equipment for a different variety of the game. Athens, Agora Museum. (Agora Excavations Photograph.)



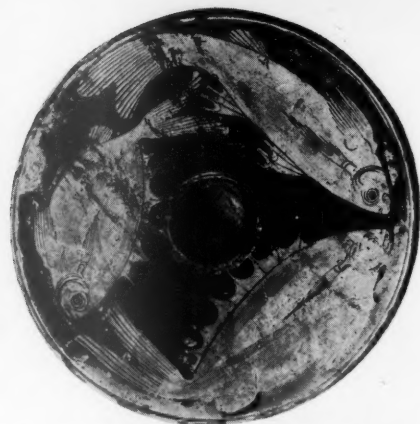
10. The duck, a common household pet, raises its beak at the idea of food. But the cup is empty. A Corinthian kylix in the British Museum. Late fifth century B.C. From Lane, *Greek Pottery*, plate 95 a.

duck is nowhere mentioned as a substitute for saucers, and such birds were common household pets. Rather than assume a new and unevidenced variety of kottabos, we should instead infer that the young girl is either pretending to play or feeding the duck, and the latter is in no danger of sinking.

WE RETURN FINALLY to the psykter with its quartet of lovelies. In both types of game the object was victory in a sport—dislodging the disk or sinking the dishes—and ancient authors relate that prizes were given to the winner: eggs, cakes, fruit. On certain of the vases these can be seen on small tables. On the psykter, Leagros is named by the woman throwing the wine-lees. On another vase, the statement is "This for you, Euthymides." It can

hardly be a simple toast, and in many instances the strongly aphrodisiac nature of kottabos is noted. "There are ticklings and the smack of kisses; these are the prizes I set up for the one who best shoots the kottabos," says a character in Sophocles' *Salmones*. "The loud clattering of the Cyprian's kottaboi rings out a sweet tune in the house," says another in Euripides' *Pleisthenes*. Ancient commentators on the game stressed its erotic character, and success in it was "a sign of being loved by a woman or by young men." It seems certain from this evidence that the stake in the game was often a servant who attended the players. Such an interpretation points to the reason which prompted our drunken young friends to descend on the Megarian courtesan with such disastrous effect, as suggested in Aristophanes' comedy.

# SPINA REDIVIVA



BY SABINE GOVA

IN THE EARLY MORNING of August 28, 1959, representatives of the government, the church and scientific associations gathered in the Valle Pega near Comacchio, Italy, to celebrate the excavation of the two-thousandth tomb of this necropolis. The work in Valle Pega had begun in 1954, when Professors Paolo Enrico Arias and Nereo Alfieri started digging with three workmen, three pails and three spades. After 1955 Professor Alfieri continued with the help of Dr. Giorgio Gualandi. During the first year the cemetery

yielded 342 tombs; for 1957 the diary of the excavations listed 1195.

During this ceremony a small airplane, flying at low altitude, dropped a message of congratulation signed by Vitale Valvassori and Ugo Cassigoli. It was a reminder of the cooperation of these two scientists, whose aerial photographs had helped discover Spina's city of the living, thirty-five years after the unearthing of its city of the dead.

The exploration of Valle Pega and the finding of



Air view of the recently drained area in which lie the remains of Spina. This picture was taken facing the Adriatic Sea, which appears faintly in the background. The town of Comacchio is at the left, between the drained area and the sea.



*Above and opposite page:* Attic red-figured plate with painted fishes. Fourth century B.C. Nine such plates were found in Valle Trebba.



Terracotta askoi in the form of animals. Fourth century B.C. These small vases are relatively common in Valle Trebba. Most of these vases are Etruscan; the vase with a kneeling negro is Campanian.

Spina were the dramatic second and third acts which had been preceded by the first act: the excavations in Valle Trebba under the direction of Professor Salvatore Aurigemma and Dr. Augusto Negrìoli.

Originally the work in Valle Trebba was not undertaken for archaeological reasons. In 1913 the municipality of Comacchio considered the draining of several valleys, covering about eighteen square miles, for agricultural purposes. This project was approved by the government in the spring of 1919, and in the

autumn the department of civil engineering of Ferrara began to lay out a network of canals for the purpose of collecting the water in Valle Trebba. As the ground became drier, experiments in cultivation were conducted, and by the end of March, 1922, Etruscan tombs were found in the southern part of the reclaimed ground.

Etruscan tombs had long ago been discovered in the Padanian area, near Bologna and Marzabotto, but many had been robbed in ancient times. Valle Trebba promised new and better material. Excavation was immediately begun and continued until 1935, when the whole burial ground had been explored. By this time 1213 graves had been examined. The great majority (about 1080) were found in an area stretching 1800 feet from north to south and some 900 feet from east to west. The entire necropolis was 6000 feet long and 2200 feet wide. In order to estimate the full range of graves, an indeterminate number looted by illicit explorers should be added. Nevertheless, no significant number of objects appeared on the black market.

In 1953, however, the art world was alerted by the sudden appearance on the market of hundreds of Greek and Etruscan objects, all belonging to the same period and style as the finds of Valle Trebba. During this summer, eighteen years after the termination of the excavation of the necropolis in Valle Trebba, new hydraulic work had been undertaken in the adjoining lagoon, the Valle Pega, about two miles west of Comacchio. The water had been lowered to a level no longer deep enough for boats, yet too deep to wade in. It was found that inventive thieves were attaching



Gold earring found in Valle Trebba. Etruscan, fifth century B.C. This example is especially notable because of the granulation technique used in the headdress. Numerous earrings were found in the tombs. They are always of metal and with few exceptions are ring-shaped and hollow, like this one, with one end plain, the other enlarged into an animal or human head. These earrings presented a peculiar appearance when worn, as the sculptured heads were then upside down.



Attic red-figured calyx-crater (ca. 390 B.C.) from Valle Trebba, bearing a representation of Iphigenia in Tauris. In the center is the temple of Artemis, with her statue and the offering table. At the right stands Iphigenia the priestess; at her feet old King Thoas is seated, with his Scythian fan-bearer standing behind him. At the foot of the temple Orestes is shown in supplication. Iphigenia appears again at the other side of the temple, handing Pylades the message destined for Orestes.



Bronze finial of a candelabrum, with the figure of a discus thrower, found in Valle Trebba. Etruscan, fifth century B.C.



Two amber necklaces with pendants, and between them a pendant in the form of a ram's head, found in Valle Trebba. Amber has been discovered in more than one hundred of the tombs, which is not surprising as the Gulf of Venice has always been an important amber market. Both Pliny and Tacitus say that in their day the inhabitants of Transpadana still wore amber to prevent diseases of the throat.



Attic red-figured volute-crater, found in one of the richest tombs of Valle Pega. Ca. 460 B.C. Attributed to the "Niobid painter." Greeks are shown fighting with Amazons; in the neck zone, Dionysus with bacchantes and satyrs.





*Above:* Attic red-figured bell-crater from Valle Pega, with a scene of the Attic theater at the time of Aeschylus. About 450 B.C. One actor holds in his left hand the mask he is ready to wear; the other actor is already disguised as a maenad.

*Right:* Attic red-figured volute-crater on a stand from Valle Pega. About 400 B.C. A scene of the fall of Troy is represented. Priam, in Phrygian costume, is sitting on the altar of Zeus and is being attacked by Neoptolemus. On the steps of the altar sits Andromache, with Astyanax on her knees. Behind her stands the Palladium, to which Cassandra clings. Her garments have slipped down; Ajax the Less has seized her by the hair. Two fleeing women are seen at each side of the group; the older one on the right may be Hecuba. On the reverse is a battle of Lapiths and centaurs. On the neck of the crater the young Dionysus sits between maenads and satyrs; on the back of the neck is shown the Calydonian boar hunt.



## SPINA continued

wooden boards to their hands and feet and were gliding on all fours across the swamp, probing the mud with steel-tipped poles in search of the desired loot. It was a difficult task to bring the seven thousand acres under the control of the police, but this was successfully accomplished.

ARCHAEOLOGICAL INVESTIGATION began while the ground was still twelve to fifteen inches under water, with tombs embedded as deep as six feet in the muddy soil, making excavation much more complicated than it had been in the drained territory of Valle Trebba. When the obstacle of the lagoon was mastered, the topographical conditions in both places proved similar, as did the tombs and their contents. There was no doubt that a second burial ground of the same city and period had been discovered. This second necropolis, which is now separated from the first by the Canale Pallotta, extended south of it for approximately one mile, and was 750 feet wide.

The tombs were at the bottom of three layers of earth. The top layer was carpeted with small swamp

shells; a second layer about thirty inches thick was composed of alluvial matter mixed with blue-gray sand; and the last layer, of fine beach sand, held the skeleton or cinerary urn and burial offerings. Approximately two-thirds of the dead had been interred and the rest cremated. This prevalence of inhumation over cremation corresponded to the custom in the Etruscan necropolis of the "Certosa" of Bologna, but was the contrary of the situation at Marzabotto.

Cremation and inhumation were intermingled in the Trebba and Pega valleys. Both burial customs were in use at the same time and had nothing to do with the financial condition of the deceased, although there were some unusually rich inhumation graves. All the offerings, whatever their kind and quality, could be dated between the middle of the fifth century and the first half of the third century B.C. As no quarries existed in the neighborhood, there were no monuments or sarcophagi, with the exception of two small marble cinerary urns. The burial offerings found near them may have been placed in wooden cases.

Very little remained of the wooden containers used for corpses as well as for ashes. Occasional remnants suggested an analogy with Marzabotto, where rec-



Air view of the site of Spina, taken at low altitude. The plan of the city is shown by the strips of darker vegetation, representing former canals, and the rectangular areas of sparser growth, delineating the blocks of houses or other buildings. The modern drainage canals cut through the ancient city, whose streets, like those of Venice, were mainly waterways. The wide dark band in the upper left corner has been identified as a main interior canal.



Foundation piles which supported one of the *insulae*, or blocks of buildings, of ancient Spina.

## SPINA continued

tangular coffins made of slabs of calcareous tufa were found. Some of these were nearly seven feet long and of considerable depth, to hold the numerous offerings. As burial customs were the same in Valle Trebba and Pega, the coffins are presumed to have had corresponding shapes and proportions, although made of different materials.

The dead were buried with the head to the northwest. The gifts were always laid at their right, in imitation of the banquets of the living, where the guests reclined leaning on the left elbow, as represented on Etruscan sarcophagi. The larger vases were usually supported on wooden stands, inside the coffin. When the wood decayed and disintegrated, the vases fell to the bottom of the coffin and broke, sometimes into more than a hundred fragments.

Occasionally ashes and scorched bones were preserved in jugs similar to those used for storing oil. To protect the contents, a simple dish of yellowish clay was placed upside down on top of the vessel. In one cremation burial (Tomb 506, Valle Trebba) a small skull and delicate bones were found together with bones of greater size. As young girls were rarely cremated, it would appear that the body of a boy had been deposited together with the ashes of a man.

Where complete skeletons were unearthed, a small bronze coin, the obol for Charon, was often found in the right hand. The shrouds were decomposed, except for an occasional remnant. The jewelry that had been worn in life—earrings, necklaces, rings, etc.—in some cases surrounded the skeleton in great abundance. This suggests the custom of lying in state.

With the exception of rare cases where points of weapons were found, it was impossible to distinguish the sex of the dead. The position of the pelvis, which would have been helpful for differentiation, changed under the floating motion of the lagoon. Sometimes the skeleton was bent to the point of encircling the offerings, literally holding them in the lap.

THE PREDOMINANT QUESTION was, of course, to what city the cemeteries belonged. Without hesitation they were associated with Spina. Professor Negrioli was the first to assert (in 1924) that the burial ground in Valle Trebba must have belonged to this vanished city. The site as well as the contents of the tombs indicated a city of Spina's size and period. Greek and Etruscan objects bearing inscriptions in both languages appear indiscriminately in the individual tombs, thus obscuring the ethnic origin—Etruscan, Greek, Venetian or Umbrian—of the dead. Such a

situation would be characteristic of an Etruscan city with a flourishing nucleus of Greek inhabitants and an international port.

While the cemetery revealed no evidence excluding the possibility of association with Spina, it offered no definite clue to the city's location. The only helpful fact was the greater density of graves toward the south; this, then, must have been the part nearest to the city, and the search centered in that direction. Furthermore, the city could not have been far away, for the cemeteries of the ancients were always within sight of the dwellings of the living.

References to Spina in Classical literature have made the problem easier. It is obvious that Spina played a prominent role in history, for it is described by a number of Greek and Roman authors. Dionysius of Halicarnassus (who flourished early in the first century A.D.) tells its story in detail, interwoven with legend. In his *Roman Antiquities* (i.17.18) he relates how the Pelasgians, commanded by an oracle, sailed to Italy.

"And having prepared a great many ships," Dionysius continues, "they set out to cross the Ionian Gulf, endeavoring to reach the nearest parts of Italy. But . . . they were carried too far out to sea and landed at one of the mouths of the Po called the Spinetic mouth. In that very place they left their ships and many of their people who were least able to bear hardships. . . . Those who were left behind surrounded their camps with a wall and brought in a stock of provisions in their ships; and when their affairs seemed to prosper satisfactorily, they built a city and called it by the same name as the mouth of the river. These people attained a greater degree of prosperity than any others who dwelt on the Ionian Gulf; for they had the mastery at sea a long time, and out of their revenues from the sea they used to send tithes to the god at Delphi, which were among the most magnificent sent by any people. But later when the barbarians in the neighborhood made war upon them they deserted the city; and these barbarians in the course of time were driven out by the Romans. So perished that part of the Pelasgians that was left at Spina."

Some seventy years later Pliny the Elder, in his *Natural History*, reversed the story of the origin of the

SABINE GOVA, the daughter of a French mother and a German father, was born in Hamburg, Germany. She studied at various German universities and holds a Ph.D. degree from Marburg. Later she studied at the École du Louvre and lectured at the Louvre and other museums in Paris. An American citizen since 1947, Dr. Gova is Lecturer at Fordham University and is active as a speaker and writer. In 1958 she participated in the season's excavations at Spina.

## SPINA continued

name of Spina in giving a description of the Po delta, but otherwise supported the narrative of Dionysius. Pliny says (iii.20) that nearing Ravenna the name of the Padus (Po) was Padusa, having formerly borne the name of Messanicus. He continues: "The nearest mouth to this spot forms the extensive port known as that of Vatrenus. . . . This mouth, which was formerly called by some the Eridanian, has been by others styled the Spinetic mouth, from the city of Spina, a very powerful place which formerly stood in the vicinity, if we may judge by the quantity of its treasure deposited at Delphi. . . . At this spot the river Vatrenus, which flows from the territory of Forum Corneliensis, swells the waters of the Padus."

These writers of the first century were praising a city whose fame was still great enough to be remembered but which had completely lost its importance. In his *Geography*, Strabo describes its fate (v.1.7): ". . . Altinum too is in a marsh, for the position that it occupies is similar to that of Ravenna. Between the two cities is Butrium, a town belonging to Ravenna, and also Spina, which though now only a small village, long ago was a Greek city of repute. At any rate a treasury of the Spinetae is to be seen at Delphi, and everything else that history tells about them shows that they were once masters of the sea. Moreover it is said that Spina was once situated by the sea, although at the present time the place is in the interior, about ninety stadia [ten miles] distant from the sea."

During the Renaissance interest in the memorable city of Spina reawakened. Beginning with the investigations of Flavio Riondo of Forlì in the fifteenth century, the problem was subject to a chain of exhaustive studies. They were obscured, however, by a decisive change that had taken place in the current of the Po River. After the dam at Ficarolo broke in the twelfth century, the main stream of the Po turned north, while the former delta near Ravenna became swamp land with outlets toward the Adriatic Sea.

In 1955, when the area was drained, the marshy soil seemed to discourage hopes of finding the city. Later, seagrass covered the barren region, bringing it closer to a workable condition. Professor Vitale Valvassori then took pictures from an altitude of twelve thousand feet, and these were carefully studied by Alfieri.

He discovered that the grass grew in different shades of green: it was obvious that there were regular squares and rectangles where the grass grew poorly, while the net of narrow bands in between produced a healthy dark green vegetation. Alfieri arranged for a series of pictures to be taken from a low altitude, and these confirmed his conjecture: the fertile areas had been canals, the unfertile had been covered by buildings. This was the ground-plan of a city. Was it Spina?

A main interior canal forty-five feet wide could be recognized. It began at the present Canale Paviero, continued in a northerly direction toward the dike of Borgazzi, then made a right-angle turn and continued east-west. A net of smaller canals framed the more or less geometrical forms of the plots that had been sites of buildings. A similar net of canals appeared a mile farther south, and more pictures taken by Valvassori showed corresponding schemes of urbanization in other districts near Valle Trebba and Pega. They seemed to verify the theory held by Professor Arias that Spina had been a nucleus around which villages and boroughs had gathered, a development not unusual in early Italy. In any case no other metropolis in this region but Spina could have had a plan so vast and scientifically perfect. Like Ravenna, as described by Strabo, Spina was a city where watercourses took the place of streets.

Though no buildings or monuments were left to testify to the date of this city's construction, excavations along the major canal resulted in finding pottery of the late fifth and the fourth century B.C., and what is more, a fence of piles was unearthed which had been built to support the houses standing on the sandy space between the canals.

The digging is continuing and the results will increase our knowledge of this Venice of antiquity. Nevertheless, an important mission has already been fulfilled. In the words of Nereo Alfieri: "In the history of Italian archaeology these excavations are the most important carried out in northern Italy. The wealth of material brought to light so far is a document of the Etruscan superiority in city-planning and hydraulic science. It is a further historical confirmation of the cultural development of a people scattered across a swampland, yet united by a highly civilized urban life and a prosperous maritime commerce."





tombs. Of these, eighteen showed some decoration remaining, and two turned out to be of prime importance.

Of these two, the so-called Tomba della Nave is of the greatest interest not only to students of Etruscan art but to those of the history of the sea and ships. It is dated about the end of the fifth century B.C. On one wall is a picture of a merchant ship under full sail. Although imperfectly preserved and tantalizingly obscure in some details, there is no doubt that the vessel has two masts; it is thus by far the earliest representation preserved of such a rig. Even more interesting is the fact that the foremast is unlike any hitherto known from the ancient world. These are all strongly inclined forward, like a bowsprit. The foremast of this ship is also inclined forward, but so slightly that it resembles a modern foremast rather than a bowsprit.

The paintings of the Tomba della Nave have been stripped off the walls and are being remounted at the Istituto Centrale del Restauro in Rome. When the work is completed the tomb will join four others already on display in the museum at Tarquinia.

#### **Fourth International Congress on Iranian Art and Archaeology**

In New York City, on April 24, 1960, before a distinguished company of scholars from many countries, Professor Ernst Kühnel of the University of Berlin convened the Fourth Congress of the International Association for Iranian Art and Archaeology. After an official welcome from James Rorimer, Director of the Metropolitan Museum of Art, and messages from the President of the United States and the Shah of Iran, memorials were read of those distinguished students of Iranian studies who had died since the Third Congress, held in Russia, in 1935.

Ten sessions were held for the reading of papers (all but the last in New York). At these sessions a varied assortment of papers was presented on numerous aspects of Iranian art and archaeology and relationships with other areas. During the ten days of the Congress the delegates visited museum collections in New York, Philadelphia, Baltimore and Washington, and were entertained at a number of luncheons, teas and receptions in the various cities. The events culminated in a re-

ception at the Freer Gallery of Art in Washington, at which the Charles Lang Freer Medal was presented to Professor Kühnel. Lack of space prevents us from reporting in any detail on most of the sessions and events, but we are indebted to Mr. Edward L. B. Terrace of the Museum of Fine Arts in Boston for the following brief report on some of the papers on pre-Islamic Iran.

Phyllis Ackerman Pope illustrated examples of early Iranian pottery which she believes to show symbolically an eternal water cycle.

Roman Ghirshman discussed the influence of early first-millennium material from northwestern Iran on other areas, calling attention to the similarities of Iranian black and gray ware with pottery of southeastern Europe. He explained these similarities and those existing between certain Luristan and Greek axe-types as the result of European-Iranian contacts, perhaps in the Black Sea region or the Caucasus.

R. Heine-Geldern found the origins of the Mohanjo Daro plain-ware pottery in northern Iranian prototypes, and stressed the importance of Iranian influence on the Indus Valley as well as on China. He said that the Chalcolithic culture of India which surrounded the more highly developed culture of the Indus Valley should also be explained by Iranian connections.

Richard Barnett discussed the influence of Median art on surrounding areas and the representations of Medians in contemporary art of Western Asia. He emphasized that the art of Luristan must be considered as having a Median background. On the other hand, he disclaimed any Mesopotamian origins for Iranian culture of the first millennium. The sources lay rather in Elam and Urartu.

Edith Porada set forth evidence for the heritage and date of the gold bowl from Hasanlu, in northwestern Iran. As previously pointed out, the representations on the bowl seem to contain vivid elements of Hurrian mythology, but how they were transmitted is not clear. More recently a silver beaker, also found at Hasanlu, has been published, and Miss Porada would suggest that the bowl was made before 900 B.C., while the beaker, in a rather different style, was made about 850 B.C.

Rudolph Naumann, reporting on the architectural remains at Takht-i-Su-

leiman, called attention to a number of Parthian and Sasanian constructions, including a cruciform chamber containing Sasanian sherds. A series of terraces and steps mounting the lower reaches of the outcrop of the Takht-i-Suleiman itself is dated to the first millennium B.C., but the meaning of this construction is elusive.

S. N. Kramer gave an account of the city of Aratta mentioned in several Sumerian epics. Professor Kramer concluded that Aratta must have been in Iran, for several reasons which he gave in detail. In later texts, place-names similar to Aratta and Turu (a mountain said in the epics to be in the vicinity of Aratta) suggest that Aratta was situated in the Van-Urmia region.

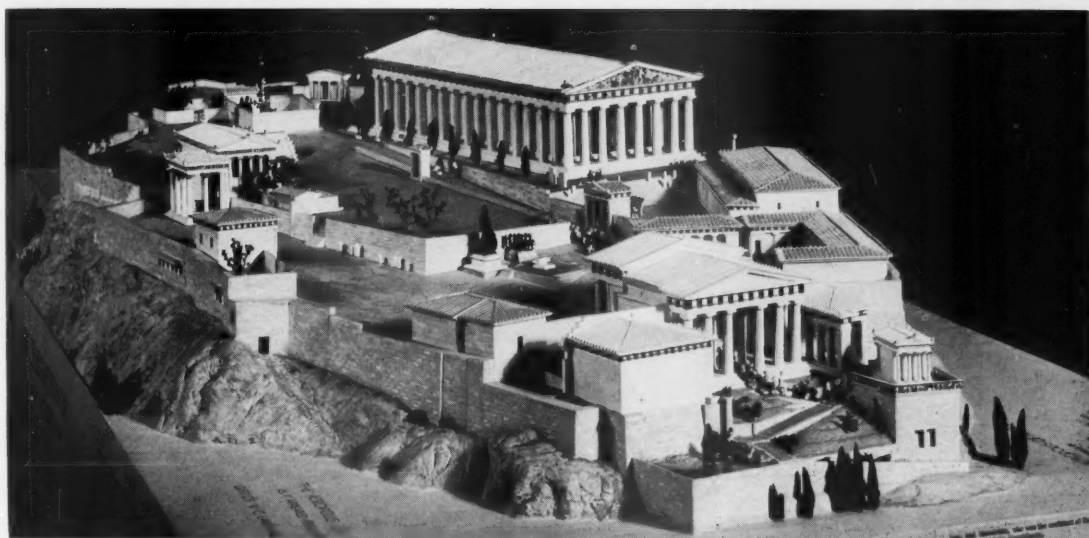
Ezat Negabahn considered the problems of earliest prehistoric Iran. In conclusion he suggested a division of the prehistoric period into eight stages, including three major transitions.

The Congress was fortunate in having among those in attendance a delegation from the Japanese Iran-Iraq Expedition. Seiichi Masuda reported on excavations in the Elburz mountains at Umam. Dolmens were found which resembled Asiatic constructions, and more tripod pottery was discovered, adding to the material for suggested Iranian-Chinese connections. Namio Egami reported at length on the excavations at Djari and Marv Dasht, two prehistoric sites southeast of Bakun in southwestern Iran.

Robert Dyson presented a detailed account of the excavations at Hasanlu. At least nine occupation phases can be distinguished, ranging from ca. 5000 B.C. to A.D. 1000. In the ninth century B.C. there appear multiple-story buildings, and the material remains of the period attest to a rich, highly developed, widely connected town life. It is in such a sophisticated milieu that we must consider the gold bowl and silver beaker.

Louis Vanden Berghe called for a careful exposition of each of the early Iranian pottery styles as an aid to the proper study of prehistoric Iranian religion. In a second paper Dr. Vanden Berghe reported on the results of the Iranian expedition to southern Iran, which found prehistoric and Sasanian remains at sites east of the Persian Gulf.

George Cameron adduced evidence for the growing influence of Zoroastri-



### Model of the Acropolis

A copy of the model of the Athenian Acropolis made in Athens in the 1940's under the direction of G. P. Stevens of the American School of Classical Studies was given to the Royal Ontario Museum in Toronto by Mr. W. C. Laidlaw in 1957. The Stevens model was the most accurate and detailed one ever made of the

Acropolis, but it was decided to add further detail to the Toronto copy before putting it on display. Miss Sylvia Hahn, a very gifted artist-technician who has done many fine models and paintings for the Museum, worked for nearly two years on the Acropolis model, coloring the white plaster throughout, modeling the cliffs, tiling the roofs, fluting the columns (even of the Nike Temple!), adding trees

and bushes, inserting doors, reproducing the sculptures mentioned by Pausanias and conjecturally located by Stevens, inserting the metopes, frieze and cult statue in the Parthenon, and representing the Panathenaic procession passing through the Propylaea on up to the Parthenon. The Athena Promachos and the Parthenon gables were sculptured in Athens. (Photograph by Leighton Warren.) Scale 1:200.

anism in the Achaemenid court as early as the reign of Darius, culminating during the reign of the first Artaxerxes in the actual performance of Zoroastrian rites. The evidence of a contemporary cylinder seal makes it almost certain that the mortars and pestles of the time of Artaxerxes I found at Persepolis were used to prepare a narcotic for one of these rites.

### SAA: Twenty-fifth Birthday

The twenty-fifth annual meeting of the Society for American Archaeology was held at Yale University, May 5-7, 1960. Over two hundred persons attended the sessions and about one hundred and fifty enjoyed the dinner, when Dr. Geoffrey Bushnell, of Cambridge University, gave an address on "An Old World View of New World Prehistory."

The opening session was devoted to a symposium on "Cultural Relations between the Arctic and Temperate Zones of North America," in the first

part of which nine specialists presented the results of their recent excavations bearing on this point. On the first evening there was a symposium on "The Teaching of Archaeology"; and most of the second day was given to a symposium in which experts on seven regions reviewed the great developments and changes in opinions during the last quarter-century. The other three half-days were occupied each by three concurrent sessions, in which some fifty contributed papers were presented. As might be expected, reports on the archaeology of the United States were in the majority, with very few on South America.

Considerable attention was paid to the Paleo-Indian. John M. Campbell reported on sites in the Brooks Range, Alaska, with material of 8000-10,000 years ago resembling Siberian Palaeolithic, and Charles E. Borden showed remarkable objects from British Columbia, possibly 7000 years old. The Old Copper Culture of the Great Lakes region was ascribed a date of

3000—or even 5000—to 1000 B.C. by George Quimby, who believes that its techniques were adopted by the recent Copper Eskimo. William J. Mayer-Oakes reported on a site of hunting peoples near Quito, Ecuador, with quantities of obsidian artifacts, some fluted and resembling those of Lindenmeier, the patina of which suggests an age of 5000-10,000 years. We were also reminded of a Paleo-Indian site in Venezuela of possibly 16,000 years ago, and of the arrival of man at the Straits of Magellan by at least 7000 before Christ.

Of those papers heard by the present reporter—whose interests lean toward Latin America—the following seemed to him the highlights. S. K. Lothrop told of the little known culture of southwestern Costa Rica where immense, perfectly spherical stone balls up to eight feet in diameter and sixteen tons in weight were made, for an unknown purpose, until the time of the Conquest. Irving Rouse spoke of the abandonment of the Circum-Car-

ibbean theory, since in most places archaeological evidence of peoples of tropical cultures precedes that of specialized Circum-Caribbean peoples. There is still no evidence of pre-Columbian contact between the Antilles and the North American mainland. Richard N. Woodbury outlined the irrigation practices of the Hohokam of the Gila River Valley, Arizona, of about A.D. 800, some of whose canals were twelve miles long and seventy feet from crest to crest. J. Charles Kelley gave good evidence from his excavations in northern Mexico of the Mesoamerican origin of Puebloan religion. Linton Satterthwaite presented the results of radiocarbon analyses of a large number of pieces of wood from structures of known date at Tikal, Guatemala, made by Elizabeth Ralph of the University Museum's laboratory. These strongly support the Goodman-Thompson-Martinez 11-16 correlation of the Mayan and Christian calendars.

J. ALDEN MASON

### American Research Center in Egypt

The American Research Center in Egypt is ten years old this year. It is appropriate at this time to give a brief history of the Center and to describe the background for its foundation.

American interest in ancient Egyptian studies goes back well into the past century, sparked by the formation of private collections of antiquities, all of which eventually found their way into public museums. But it was not until the early 1900's that American scientific excavation and research began in this country. Scholars such as Reisner, Breasted and others became active in the field and built up collections of Egyptian art and archaeology. Not only did this work bring to America outstanding collections, but it supplied essential training for the men who today staff our museums and universities.

In the early period excavation in Egypt was carried on under concessions from the government that permitted about half the finds to be exported by the excavator, a generous provision which made it possible for American museums to provide funds for the work, for this was the best way to build up their collections. But from the 1920's on things began to change. Egypt, as an independent country, naturally evinced a growing reluctance to sanction the export of treasures

from her great past (neither Greece nor Italy had done so for many years), and foreign excavators were increasingly unable to obtain divisions of their finds satisfactory to their supporters. (Within the past year, however, the Egyptian government has announced a much more liberal policy in this respect, which should encourage renewed activity by foreign excavators.) Another factor in the changing situation was the economic effect of two world wars on all countries. By the 1940's American museums found themselves in the position of having to spend ever increasing sums, because of mounting costs for travel, labor and supplies, and obtaining ever less favorable allocations of finds. Apart from the drying up of the source of antiquities, this new situation had other serious consequences. To the scholars who had worked in Egypt the acquisition of museum objects was a by-product of scientific research, and it was the stopping of the acquisition of new knowledge which they felt keenly.

American interest in Islamic studies, especially in art and archaeology, came to life somewhat later than did scholarly concern with Egyptology. Before World War I a few Orientalists offered courses in the history and languages of the Muslim Near East. Around the turn of the century American collectors had begun to appreciate the beauty of Islamic miniature painting, decorated pottery, tiles, textiles and fine carpets. Even today, with a growing consciousness of the importance of the Near East and its cultural traditions, there are only a handful of scholars in the United States who are trained in Islamic art. While many universities have established centers for Near Eastern studies, the emphasis is on history, language and political economy, and museums with important collections in the Islamic field have difficulty in finding competent curators without having to go abroad for them. For the training of young scholars in this neglected field, Egypt, with its splendid monuments, its libraries and its ancient university whose scholars are learned in Muslim erudition, offers an excellent opportunity, situated as it is between Spain and North Africa and the Islamic countries of Asia.

It was the realization of the need to facilitate scholarly work in these fields which led to the formation of

the American Research Center in Egypt. For many years there had existed in Greece and Italy two scholarly institutions whose interests and activities seemed to point the way. The American School of Classical Studies at Athens and the School of Classical Studies of the American Academy in Rome furnished the inspiration for the new Center in Egypt, which, like them, is affiliated with the ARCHAEOLOGICAL INSTITUTE OF AMERICA. A large part was played in the preliminary discussions by the late Joseph Lindon Smith. In 1950 the American Research Center in Egypt was incorporated under the laws of Massachusetts. Its purpose was to foster Egyptological, Islamic and other humanistic studies in Egypt, to assist American and other scholars requiring information in their various fields of research, and to maintain cordial relations with Egyptian scholars for the advancement of learning, while remaining entirely divorced from present-day political activities.

Upon the organization of the Center, an appeal for support resulted in an initial membership of 188. Although the financial support of a number of members was most generous, the resources of the Center were extremely modest. It was realized that if the Center were to be more than a dream, it must have representation on the spot in Cairo. It was fortunate in being able to take advantage of the opportunity afforded by the U. S. Educational Foundation, under the Fulbright Act, to send a series of eminent scholars to Egypt, both to pursue their own studies and to represent the Center as Director in Cairo. Between 1951 and 1956, when the Fulbright grants terminated, three Egyptologists and one Islamic scholar acted as Director of the Center in Cairo. Since 1956 the representation of the Center in Egypt has been carried on and expanded through a generous grant from the Bollingen Foundation, which has made it possible to provide two scholarships each year, one in Egyptology and one in Islamic studies. Thus the Center has in a modest way fulfilled its aims up to the present. Its work has increased and its financial resources have improved, but its needs have continued to increase. In particular there is urgently wanted more permanent representation in Cairo, which the annual scholarship grants cannot supply. To



meet its needs, the Center must build up its capital resources substantially.

The next few years should be exciting and full of opportunities. The construction of the new High Dam at Aswan, which in four or five years will flood a stretch of the Nile Valley extending some three hundred miles south from the First Cataract, presents a challenge of major proportions. Besides the two great temples of Philae and Abu Simbel, the endangered area contains many other known and unknown monuments covering a long period of time, ranging from prehistoric through Pharaonic, Hellenistic, Roman and Coptic to Islamic. An international appeal for funds and for scholarly assistance has gone out through UNESCO from the Governments of Egypt and the Sudan. This crisis in historical research and preservation is bound to increase greatly the general interest in the very fields where the center can give assistance. Support on an increased scale will enable the American Research Center in Egypt to play a fitting part in meeting this challenge.

Any of our readers who are interested in becoming members of the American Research Center in Egypt and sharing in its aims and achievements may write to the Executive Secretary, Mrs. Elizabeth Riefstahl, American Research Center in Egypt, Inc., 479 Huntington Avenue, Boston 15, Massachusetts.

### Project in Iran

The Iranian Prehistoric Project of the Oriental Institute of the University of Chicago and the Baghdad School of the American Schools of Oriental Research conducted a three-part season in the valley-plains about Kermanshah, Iran, September 1959 through June 1960. During the autumn, some two hundred prehistoric mounds, open hill-top scatters and caves were surveyed. This survey was continued in the spring. Test excavations on promising sites were undertaken during the winter, and the senior staff participated in a fortnight's seminar at the Institute of Archaeology of the University of Tehran (which co-operated with the Project's field work). The spring season was given over to formal excavation of a cave (Warwasid) and two open sites (Tepe Asiab and Tepe Sarab).

The surface survey materials lent

themselves to an eight-part subdivision, suggesting pre- and protohistoric activity along this part of the Zagros flanks, from Acheulean through Uruk times. The materials suggest a complete sequence for this time range (about 100,000 to 5000 years ago). With regard to excavated materials, the Warwasid cave runs from Mousterian through the Baradostian and Zarzian industries; Tepe Asiab yielded incipient village-farming community material, essentially within the range of Karim Shahir but typologically different in detail; Tepe Sarab contained flint tools, stone bowls and bracelets, figurines and pottery, some of which recalled material from Jarmo. In other aspects Sarab seems to be somewhat more advanced than is Jarmo.

### The Newport Tower Again

Some years ago *ARCHAEOLOGY* joined in the raging controversy over the origin and date of the mysterious tower which stands in Newport, Rhode Island (see Volumes 2 [1949] 146-149, 3 [1950] 82-86, 183-184, 4 [1951] 54-55, 155-158).

Now an engineer, Mr. Edward Adams Richardson, has re-opened the matter. In an article entitled "The Builder of the Newport (Rhode Island) Tower" in the *Proceedings of the American Society of Civil Engineers* (February, 1960), he states his reasons for inclining toward the theory of an early (fourteenth century) origin for the Tower. Those readers who

are interested may obtain copies of the paper from the American Society of Civil Engineers, 33 West 39th Street, New York 18, New York.

### Ventris Memorial Fund Award

The Michael Ventris Memorial Fund was founded by his friends in memory of the young English architect who deciphered the Linear B script, in appreciation of his work in Mycenaean civilization and in architecture.

The objects of the Fund are: 1) to promote the study of Mycenaean civilization or kindred subjects by awards or studentships to students of post-graduate status or other comparable level of achievement; 2) to promote the study of architecture by awards or studentships to architects or students of R.I.B.A. (Royal Institute of British Architects) Intermediate status or other comparable level of achievement. The Awards, which are open to students from all countries, will be made by an Advisory Committee appointed by the Institute of Classical Studies and the Architectural Association acting jointly. The Award in 1960 will be for Mycenaean studies, in 1961 for architecture, and thereafter will normally be offered in alternate years for each subject.

An Award in the field of Mycenaean civilization will be made in the autumn of 1960 if a suitable applicant comes forward. The Award will be for £100 (about \$280), and payment will be made in a single sum on January 1,



Survey party collecting at a cave overlooking the Kermanshah plain. The cave is in the middle ground, above the jeep.

1961. Applications should be addressed to the Secretary, Institute of Classical Studies, 31-34 Gordon Square, London WC1, England, not later than November 1, 1960. Applicants should give particulars of their age, qualifications, academic record or other evidence in support of their application, together with the names of two references, and should outline the work they intend to pursue in the event of the Award being made to them. Applicants may be asked to attend an interview.

### Morgantina Highlights 1960

To the west of the hollow in which, during the third century B.C., work had begun on a monumental architectural scheme for a Hellenistic agora is an extensive level area. On this site, ever since the excavations were begun in 1955, it was known that there lay a residential quarter of the city. In the '80's of the last century a Sicilian archaeologist had uncovered the plan of a rich house of the second century, and in 1957, only a few yards to the west, the Princeton Expedition explored another dwelling, now called the House of the Tuscan Capitals. During the



Archaeologists, used to bandying about esoteric terms, do not always realize that others may misunderstand them. Dr. Eva Brann, a specialist in early Greek pottery, found to her surprise that a friend construed the word "potsherd" as "pots-herd." The picture above is Dr. Brann's version of the resulting situation.

past season, one of the scheduled projects was to investigate the disposition of this part of town and learn more about the nature of the houses in the area. Two long, wide trenches were opened at right angles to each other, and the spacing and direction of the block system tested. This proved to be quite regular, and the intersections of at least three streets establish the grid laid down by the planners of the late fourth century. The blocks are oriented from NW. to SE., and measure almost exactly 200 Doric feet long by 115

wide. The two trenches crossed parts of at least five houses; one of them proved to be especially rich. A great triclinium faces northwest onto a peristyle. The room measures about 6.50 m. square; it was adorned with a mosaic floor of which the elaborate maeander-pattern border remains. On the walls near one corner of the room still survive the brightly colored stucco panels in incrustation style. The peristyle itself, which has only been partially cleared, was built of well cut, stone columns of the Doric order, and nu-

## AMERICAN SCHOOL of CLASSICAL STUDIES AT ATHENS. Summer Session, June 29-August 10, 1961

Limited to approximately 20 persons: college professors, school teachers, graduate students, undergraduates. The fee of \$500 covers tuition, board and lodging at the School, all field trips (transportation, meals, rooms). Several \$500 scholarships are available.

The monuments and topography of ancient Athens, the museums and excavations are studied. Lectures by members of the School Staff and other scholars. Day trips from Athens to various sites in Attica (Sunium, Marathon, Daphne, Eleusis, Aegina, etc.). About three weeks are given to extended trips: to central Greece (Chalcis, Thebes, Thermopylae, Delphi, etc.); to the Peloponnesus (Olympia, Corinth, Mycenae, Bas-sae, Pylos, etc.); to the islands of Delos and Crete.

*INQUIRIES* concerning admission and scholarships should be addressed before January 15 to the Director of the Session: Professor Gertrude Smith, Department of Classics, University of Chicago, 1050 East 59th St., Chicago 37, Illinois.

merous fragments of the entablature indicate a house of wealth and importance. From the nature of the construction, which uses large, squared blocks (possibly taken from an earlier building), the date of the original house may safely be placed in the third century. Like most houses in Morgantina, however, it underwent alteration and subsequent occupation during the second and on into the first century. In the same area, but farther to the north, a trial pit showed that as early as the fifth century there had been habitation in this area, but the earlier plan cannot yet be traced. A deposit of red-figured Attic pottery fragments connected with a destruction layer suggests that as early as 459 B.C. the Siceliote patriots of Ducetius had wreaked the same destruction on this area as they had on Cittadella. Still from the fifth century, but over half a century later, we came on one of the unusual and rare finds that delight an excavator's heart—a silver decadrachm of Syracuse signed by the artist Euainetos.

Immediately below the west plateau on the edge of the market place five of the shops of the great, unfinished west stoa were cleared, two of them entirely, the others only in part, since all had been filled with the masses of blocks fallen from the upper part of the structure. There is good reason to suppose that the building, as well as never having been completed, had most probably never even been occupied, save temporarily by the masons themselves. The

great mass of clayey earth against which the stoa was intended to serve as a retaining wall had pushed forward and overwhelmed the building in its unfinished state. In all probability the entire project was abandoned at about the same time that the full development of the great stepped area in the center of the market was given up, near the middle of the third century, and the civic improvements planned under Agathocles at the end of the fourth century and being continued by Hieron II came to an end.

Of the entire scheme one building was, indeed, finished. During the season of 1959 excavation had begun on a long well-buttressed structure flanking the southern half of the east side of the agora. It was recognized as a granary, with additional rooms at the north end for other kinds of storage or perhaps for offices. This was entirely cleared in 1960 and, in addition to being a rather rare example of this sort of building, it is one of the more impressive monuments of the site.

Finally, Cittadella, the original acropolis, also was the site of intensive activity during the campaign. The main central area was further exposed and revealed a complex of building of the sixth century B.C., with later overbuilding in places at a higher level. There was an irregular system of streets and alleyways climbing gradually up the slope or cutting across it. As in previous years, a number of Archaic terracotta antefixes, maenad heads and gor-

goneia were found, as well as a great deal of black- and red-figured ware, from the fragments of which three deep *skyphoi* in black-figure style were reconstructed. One, which is nearly complete, has a lively Dionysiac dance on either side with the bearded god holding branches of the vine, accompanied by maenads and satyrs. Great masses of Siculan pottery accompanied the more sophisticated Attic ware, and remarkable for their number were small, pyramidal loomweights, of which several hundred were recovered. The chief monument of the area is a massive building about 75 feet by 20. It consists of four nearly square rooms, each with a door facing north, and in the center, but not precisely so, of each room a square pier cut from a limestone that differs markedly from the purely local material of which the walls are built. The purpose of the building is still obscure, but the relatively small size of the rooms (about fifteen feet each way) suggests that the piers had some function other than that of providing support for the floor above. One is tempted to think of the pillar crypts of Crete, nearly a thousand years earlier, and to suggest that the building had, possibly, a religious character, but at the present stage such speculation is unwarranted. It is true, none the less, that there was no indication that this particular building had ever been built upon in later times as had most of the structures in the area.

RICHARD STILLWELL



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## *A Tribute To A Magnificent Past*

# THE MUTE STONES SPEAK

THE STORY OF  
ARCHAEOLOGY IN ITALY

by Paul MacKendrick

**"Religion, dignity, pride, greed, pomp, tragedy:  
all are the stuff of Roman history; all are here,  
and archaeology illumines their story."**

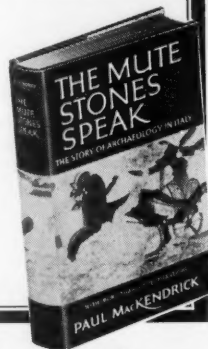
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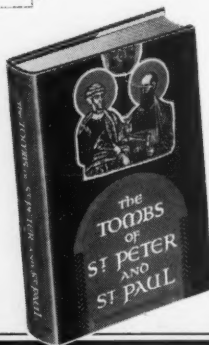
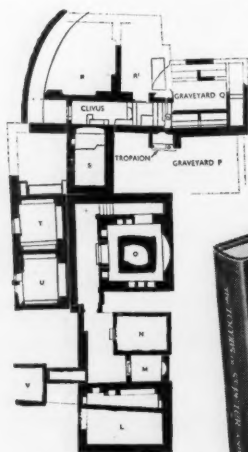
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## REVIEWS OF RECENT BOOKS

**MORE LIGHT ON THE DEAD SEA SCROLLS.** *New Scrolls and New Interpretations, with Translations of Important Recent Discoveries*, by MILLAR BURROWS. xiii, 434 pages, frontispiece. The Viking Press, New York 1958 \$6.50

This second volume on the Scrolls by Professor Burrows is in every respect a worthy companion to the first (*The Dead Sea Scrolls*, 1955). It contains translations of thirteen additional texts plus a lucid survey and interpretation of recent literature bearing on the Scrolls. The author again omits footnotes, depending upon the reader's ability to locate the sources quoted by reference to the extensive bibliography. This volume, unlike the former one, has an excellent index, including references to subjects treated in *The Dead Sea Scrolls* as well.

Burrows once again rehearses the arguments of numerous scholars, including many with whom he is in fundamental disagreement, concluding with his own judgments or with an indication that he does not yet have a firm judgment on the particular question at issue. On the relation of the Scrolls to the New Testament he remains convinced that the similarities between the two bodies of writings "have been considerably exaggerated." On the identification of the Qumran covenanters with the Essenes he also remains cautious. He argues that the connection between the teacher of righteousness of the past and the expected teacher of righteousness is still "quite uncertain."

The book is a mine of information bearing on almost every aspect of research in the Scrolls: Christian origins; the text of the Old Testament; the origin of the sect, its identification, beliefs and organization. The translations are literal without being pedantic.

New archaeological evidence from Khirbet Qumran is briefly summarized. The period of occupancy continues to

be dated from the close of the second century B.C. until the First Jewish Revolt against Rome in A.D. 66-70, or perhaps a bit later. The date of the interruption of settlement at the site is still thought to coincide with the earthquake of 31 B.C. and to have continued for thirty or forty years. The discovery of "nearly forty deposits of animals' bones at rather widely scattered points" is recorded by Burrows; he denies, however, that this justifies the conclusion that the Qumran covenanters had their own rival sacrificial altar to that in Jerusalem. More probable, in his view, is the suggestion of Milik that these bones represent the remains of meals of the community on the occasion of their annual renewal of the covenant.

Strangely enough, the author fails to mention the suggestion of Reike (*The Scrolls and the New Testament*, pages 151-152) that the council of twelve laymen and three priests might constitute not a council of fifteen but of twelve—that is, a council of twelve persons, three of whom are priests. If

Reike's suggestion is correct, the similarity with the organization of the disciples of Jesus and of the early Church is the more striking. The discussion of the rites of the community is somewhat disappointing. Burrows finds little to commend the notion that the meals of the community had any specifically sacramental character. The "Rule of the Congregation," which, as he says, "explicitly contemplates the presence and participation of the Messiah of Israel at the community's meals," is best understood to refer to conditions and practice to be observed after the coming of the Messiah. Thus he would deny that this document supports the notion of a sacramental anticipation of the Messianic Banquet on the part of the community. Burrows cannot conceive of the community's having had one of its members impersonate the Messiah at such meals. Barring such impersonation, or a spiritual interpretation, how could the text refer to present practice? H. J. Kraus has shown, however, that in early Israel there was very likely a "Bundesmit-

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tlér" who officiated at the ceremony of covenant renewal (*Gottesdienst in Israel*, pages 59-66 and passim). And what of the representative function of the kings of Israel in the cult, of which so much has been made in recent Old Testament research? Is such symbolic representation as difficult to imagine as Burrows supposes?

Another instance of inadequate treatment of the ritual of the community occurs in the discussion of the Gospel of John. The connection of Jesus' discourses with the Jewish festivals in the Fourth Gospel has been referred to as representing a concern for the calendar comparable with that in the Qumran community. Burrows dismisses this suggestion with the observation that the Gospel shows no "concern for the times when the feasts are to be observed." He notes that it was the celebration of the festivals at the temple which provided the occasions for the discourses. But surely more must be said than this. Numerous recent studies of John's Gospel have shown the liturgical importance of this element in the structure of the Gospel. The comparison to be made is between the liturgical practice of the Qumran covenanters and that of the early Church.

One final point may be in order. The author sets out to explain more fully than in his first book the relationship between historical scholarship and religious faith. His explanation is cogent and helpful, but he would be the first to acknowledge that it is not likely to be acceptable to all, or perhaps even a majority, of his readers. It is not particularly helpful to this reader, at any rate, to be told that the first concern of history is "to establish the facts." The distinction between fact and interpretation is extremely difficult to draw, in historical as well as in theological

studies. This the author knows and acknowledges; yet he is ready to state that conclusions "sufficiently established to be accepted by a general consensus of competent authorities" become binding upon the theologian and require (if necessary) that he "adjust his interpretation to them." I would not quarrel with this way of speaking; I would only suggest that historical and theological scholarship cannot be separated neatly. Theological judgments have, now and again, at least, provided clues for historical interpretation. It is unwise, in my judgment, to suppose that in every case "the theologian's task . . . follows that of the historian and depends upon it. . . ." The interpretation of literature expressive of the faith of a people calls for a dialectical relationship between the tasks of historian and theologian—a relationship frequently discernible in the work of a single interpreter. If the author would not consider it to be a condemnation of his work, this reviewer would like to pay tribute to him for his masterful combination of historical and theological scholarship in the book under review.

WALTER HARRELSON

*The Divinity School  
University of Chicago*

**THE ANCIENT MARINERS, Seafarers and Sea Fighters of the Mediterranean in Ancient Times**, by LIONEL CASSON. xx, 286 pages, 6 figures, 16 plates, 4 maps. The Macmillan Company, New York 1959 \$5.95

This small volume gives a fascinating account of man's maritime inventions and explorations, from the primitive dugouts of the Neolithic period through the enormous grain clippers of the Roman Empire. The author's first-

hand acquaintance with ships gives him a decided advantage over most Classicists in tackling such problems as the arrangement of the oars of ancient triremes. His analysis of the scene on a late Roman sarcophagus in Copenhagen (Plate 13a and Figure 6)—the attempted rescue of a man overboard and sailing tactics to avoid imminent collision—is a brilliant piece of reconstruction.

But this book is far more than a catalogue of improvements in naval architecture and methods of navigation. It is in many respects a cultural and geographical survey of the ancient world. With its chapters arranged chronologically from Egyptian through Byzantine times, it will be welcomed by those whose interests are not strictly nautical. In tracing the development of warships from the fifty-oared galley of Homeric times through the triremes of the sixth to fourth centuries and the super-galleys of the Hellenistic period, Casson considers naval tactics of famous sea battles and changing offensive weapons.

Even more fascinating is his account of the merchant fleets of antiquity. Casson follows the growth of international trade from the Egyptian coastal voyages to the land of Punt (in Arabia) and the Sumerian exploitation of Bahrein in the Persian Gulf for trade with the Indus valley, through the great Aegean maritime powers (Minoan and Mycenaean), the Phoenicians of the Dark Ages, the Greeks with their colonizing movement to the Black Sea and the Central Mediterranean, and the Romans with their luxury trade with the Far East and their intensive grain-clipper service from Egypt.

The pioneer voyages of Jason to Colchis, of Pharaoh Necho's Phoenicians and Hanno of Carthage to West Africa, of Pytheas of Marseilles to Britain, Ireland and perhaps Norway, as well as Roman ventures in the Far East, make exciting reading.

Both archaeological and literary sources have been carefully sifted. The former consist of the actual hulls of a few ancient boats, representations of ships on pottery and other objects, the distribution of artifacts revealing ancient trade routes, and the discovery of submerged wrecks. The literary sources range from the purely factual (papyrus letters of Roman sailors and

the inscribed official records of the Athenian navy yard) through historical (Herodotus and Thucydides) and semi-historical (The Voyage of Wenammon) writings, to the great epic poems (*Iliad*, *Odyssey*, Argonautic legend).

In a book whose range is so vast, it is only natural that the specialist may find some details to criticize. This reviewer would question the *wholesale* Mycenaean conquest of Crete about 1500 B.C., and wonders whether some Phoenician objects found in Greece were not acquired by Greek traders at the Syrian port of Al-Mina rather than carried directly to Greece in Phoenician boats. The recently published Treasure of Dorak (*Illustrated London News*, November 28, 1959) may necessitate some revision of the preeminence of Egypt in ancient ship-building. The silver-plated dagger with engraved representations of ocean-going ships dated to the mid-third millennium B.C. may suggest the superiority of the Yortan and Cycladic cultures in maritime matters.

SARA A. IMMERWAHR

Chapel Hill, North Carolina

**LACHISH IV. The Bronze Age. The Wellcome-Marston Archaeological Research Expedition to the Near East**, by OLGA TUFNELL. Text volume: 351 pages, 21 figures, frontispiece, map. Plate volume: 91 plates, 5 loose plates. Oxford University Press, New York 1958 (Published for the Trustees of the late Sir Henry Wellcome) \$26.90

This long-awaited volume brings to completion the report of the Lachish (Tell ed-Duweir) excavations. Under the direction of J. L. Starkey, work was carried on between 1932 and 1938, until Starkey's murder brought it to a sudden halt. Most of the effort in seven seasons of digging was expended on the clearance of the slopes of the tell in preparation for the main work on the summit. Two sections up the sides of the mound were made, many tombs dug out, and the major fortifications unearthed. The first major publication had to do with the most significant finds: *Lachish I. The Lachish Letters* (1938). The second was of a small Canaanite temple in three levels: *Lachish II. The Fosse Temple* (1940).

Many tombs, the city fortification

system and the Israelite governor's palace were presented in *Lachish III. The Iron Age* (1953). From the slope sections an inadequate attempt was made to separate some nine strata (five of the first millennium, the remainder of the third and second millennia). Actually, only the surface Stratum I and Stratum II were cleared in the gateway area, and work was forced to cease as Stratum III was being reached. Stratum I was represented principally by a fifth-century residence of an official of the Persian government. Stratum II is the remains of the city destroyed by Nebuchadnezzar in 588 B.C., while III was evidently brought to an end by the same conqueror in his earlier invasion of 598-597 (as against Miss Tufnell's dating in 701 B.C.). Stratum V designates the period when the Israelite palace was erected in the tenth century B.C., and VI refers to the thirteenth-century ruins in which the podium of the palace was set. There is no real evidence for stratification from the little work on the mound's summit, and we have only the three levels of the Late Bronze Temple, the northeast slope-section



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and the tombs with which to ascertain the city's earlier history.

The present volume is mainly given over to Bronze Age tombs and objects not otherwise fully published. Some of the tombs were very rich: for example, of the four hundred Egyptian scarabs published, 150 of them were all found in Tomb 4004 with a fourteenth-century deposit of pottery. Tomb 216, on the other hand, contained a rich collection of imported Cypriote pottery in a context which I would date *ca.* 1350-1250 (against the author's date, 1450-1300 B.C.).

Of special interest is the inscriptional material. For example, the earliest known examples of alphabetic writing are a small ostrakon from Gezer, a plaque with representation of a goddess found at Shechem, and a dagger found at Lachish. All appear to date in the late seventeenth or early sixteenth century. Of particular importance is a small square seal (poorly published on Plates 37-38: 295) from Tomb 555. On one side it bears the name of the Egyptian pharaoh, Amenophis II (late fifteenth century), while the other bears an alphabetic inscription which Albright has brilliantly deciphered. A "censer lid" and Lachish Bowl No. 1 bear inscriptions which are also very important in the history of the alphabet. These, together with the inscribed Lachish "ewer" from Fosse Temple III, probably all date in the thirteenth century (Miss Tufnell appears to date the first two somewhat

too early). And finally, Bowl No. 3 is interesting because it bears Egyptian hieratic tax receipts from the "Year 4" of an unmentioned pharaoh. Its writing is dated, preferably at the end of the thirteenth century: the fragments of the bowl were found in the destruction debris of Level VI.

Miss Tufnell has labored for twenty years from incomplete records to publish these important discoveries. She can now retire in the knowledge of having done a most difficult task very well indeed.

G. ERNEST WRIGHT

*Harvard Divinity School*

**ANCIENT LANDSCAPES: Studies in Field Archaeology**, by JOHN BRADFORD. xvii, 297 pages, 25 figures, 75 plates. G. Bell and Sons, London 1957 84s.

The importance of aerial photography as a method of archaeological reconnaissance has been recognized, at least theoretically, for several decades. In practice, however, its use was severely restricted until the Second World War, for in most countries only the military were allowed to fly photographic missions and they were only rarely at the service of archaeologists. In England alone was air photography used extensively in archaeology, and all the early developments stemmed from there. During the war the aerial reconnaissance of the Royal Air Force, in particular, covered vast areas of Europe and the Near and

Middle East, and many of the archaeological discoveries reported in this volume are the result of the examination of the files of war photographs.

An initial chapter on the purpose and practice of "air archaeology" forms almost a third of the text; it is an excellent summary of the ways in which aerial photography can and should be used in archaeology; it also mentions circumstances under which it is of little or no use. This is as succinct and authoritative a statement as can be found. It includes not only the methods of taking photographs but the proper interpretation of photographic evidence. From the general the author proceeds to particular applications in surveys of Apulia and Etruria, in the study of Roman centuriation in many parts of the Mediterranean area, and in the mapping of a number of Classical and mediaeval towns. No archaeologist looking at the large number of excellent photographs in this book, and at the many drawings made from certain of them, can fail to be impressed with results that are possible with air photography. Its use must and will spread rapidly, and in this new era *Ancient Landscapes* will be the best guide for the archaeologist making his first use of this technique.

SAUL S. WEINBERG

*University of Missouri*

**THE JOMON POTTERY OF JAPAN**, by J. EDWARD KIDDER, JR. xvi, 200 pages, 45 figures, 7 plates, 6 maps. Artibus Asiae, Ascona, Switzerland 1957 (Supplementum XVI) Sw. frs. 53.50 or \$12.75

This comprehensive and well organized volume represents many years of detailed study. Certainly it is the best single work in a Western language dealing with the pre-agricultural Jomon pottery—the so-called "Neolithic" wares—of Japan. The Jomon culture is found from Okinawa on the south to the southern Kurile Islands on the north. The associated ceramics belong to the great Eurasiatic-North American Woodland tradition, and in Japan they cover a time interval of perhaps 3500 years, from the fourth millennium down to *ca.* 250 B.C.

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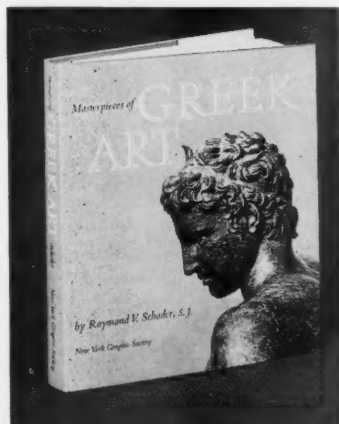
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raphy. Throughout, the presentation is made on a regional basis. Pottery developments in each region of Japan are treated as chronological units, but at the same time inter-regional relationships are discussed. Both in the arrangement of the illustrations and in the charts the all-important factor of correlation is clearly indicated, a new and highly commendable approach to archaeological concepts in Japan. For, in their emphasis on local distinctions, Japanese investigators have applied new type names with almost reckless abandon, especially in the Kanto area around Tokyo, but the sequence thus established has proved to be inapplicable except in one restricted portion of Central Honshu. Recognizing the shortcomings of this procedure, Yamanouchi advocated an over-all scheme of six stages of development, which Kidder has likewise rejected. Although he does not attempt to oversimplify the multitudinous variety of types of Jomon wares, the author approaches the problem from the point of view of ornamental techniques. Some of these are found to have spread and to be common to a number of types. This evidence provides Kidder with the necessary criteria for the establishment of families, some of which are localized whereas others are widespread. By stressing shared techniques of ornamentation rather than types as such, on the one hand, or the concept of development by stages, on the other, Kidder succeeds in working out the inter-regional correspondences of Jomon ceramics from an historical point of view.

The author's training has been in art history more than in archaeology, which perhaps explains two shortcomings of this book. Firstly, it is *not* a study of all Jomon culture; indeed,

apart from a few references to artifacts (other than pots and clay figurines), dwellings and burials, only pottery—admittedly the most sensitive indicator of culture development—is dealt with. Secondly, the arrangement of tables is confusing: a few show the earliest materials at the bottom, in stratigraphic sequence, but most of them are arranged in the manner of historians, with the oldest at the top.

Notwithstanding certain minor shortcomings, this objective and complete study of Jomon pottery merits great credit. Over one hundred major decorative styles are carefully analyzed, in addition to many others of local significance. All students of Far Eastern archaeology as well as New World archaeologists interested in the problems of the Asiatic origins of American cultures will find this an indispensable source book.

HALLAM L. MOVIUS, JR.  
Peabody Museum  
Harvard University

ANCIENT POPULATION OF SIBERIA AND ITS CULTURES, by A. P. OKLADNIKOV. Translated by VLADIMIR M. MAURIN. vii, 96 pages, 24 plates, 3 maps. Peabody Museum, Cambridge 1959 (Peabody Museum of Archaeology and Ethnology, Harvard University, Russian Translation Series, Vol. 1, No. 1) \$3.50

A vast store of archaeological information on key areas of the Old World has been accumulating in recent years as a result of the prodigious program of field work in the Soviet Union, but the major part of this is accessible only in Russian. Any opportunity for readers of English to tap this wealth of data is therefore a most welcome event. Here we have an account written for

the general reader by an outstanding Soviet archaeologist and dealing with a topic of wide interest to Americans—the prehistory of Siberia. Professor Okladnikov has compressed into relatively few pages the broad outlines of man's past in the immense territory of northern Asia as revealed by archaeology—much of it the result of his own thirty years of exploration and excavation. He pictures for us the ancient ways of life in the steppe, forest and tundra from the earliest trace of man (late Upper Palaeolithic) to A.D. 1000. The chapters cover original settlement, the Neolithic period, the Bronze Age, ancient tribal groups of northern Asia, southern Siberia from 1000 B.C. to A.D. 1000, eastern Siberia, the Trans-Baikal and Amur-Maritime regions during the first millennium B.C., and Siberia and the Soviet Far East during the first millennium of the Christian era. It will come as a surprise to many that so much is now known about this traditional blank spot in the prehistoric picture.

This first offering in the Peabody Museum's new series consists of the translation of a lengthy section contributed by Professor Okladnikov to an encyclopaedic handbook of Siberian peoples. It presupposes a certain familiarity with terms, concepts and assumptions on the part of the educated Russian reader, for whom it was intended—a familiarity that American readers cannot be expected to have. The editors should have provided the necessary assistance in the form of introduction and notes; this they have unfortunately failed to do. The bare translation is therefore not always as intelligible or useful as it could easily have been; in addition, it is marred by a regrettable number of errors. Scholars may find it of some value as background orientation, but its elementary nature and lack of documentation severely limit its importance as a research tool. Nevertheless, it can be read with profit by anyone interested in New World origins, in Asian archaeology or in human prehistory in general.

We look forward to the promised future translations in this new series, relating to the Caucasus and Soviet Central Asia, with the hope that they will be more carefully edited for the American reader.

CHESTER S. CHARD  
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ONE FOLD AND ONE SHEPHERD, by THOMAS STUART FERGUSON. 405 pages, 144 figures, 5 color plates, 3 maps. Books of California, San Francisco 1958 \$6.00

The explanation of the origin of the high cultures of Middle America by diffusion from Old World centers has in recent years attained new respectability in scientific circles, although at best it has remained controversial.

The present book, which might be termed a theological approach to the subject, presents the thesis that "Central America and Mexico received their very early high civilization from Mesopotamia in the third millennium B.C., and from two small groups of Israelites who made it across the ocean in the sixth century B.C." The stories of Quetzalcoatl and equivalent Messiahs in various parts of Middle America are regarded as evidence of the appearance of Christ in the New World. The author further states: "The hypothesis is not one that oversimplifies the problem of the early occupation of the New World. I do not deal with all ancient peoples, migrations, epochs and zones of the New World. For example, this book does not deal with the primitive desert, plains and woodland cultures of the ancient New World—it does not deal with the early Siberian-Alaskan movements—it does not deal with the influence of southeastern Asiatic peoples among the Mayas of the fifth, sixth, seventh and later centuries."

In support of this thesis, many Middle American traditions and accounts are cited, particularly that of Ixtlilxochitl, the Popol Vuh and the account of Totonicapán, written in 1554. These are compared with historical events of the Near East, with biblical narrations and particularly with the Book of Mormon. A long list of cultural parallels between the two regions is presented. Tying all this together is the archaeological evidence, with a comparison of Eastern Mediterranean and New World chronologies, art, symbols and the like.

This is no naive presentation of haphazard parallels, so familiar in many past diffusionist articles. The author is a well trained archaeologist familiar with his field, and a practising lawyer. Those who are willing to accept the verity of Divine revelations and the historicity of certain supernatural aspects of the Bible and to admit their

use as scientific evidence will find little to criticize in his presentation.

The logical mind of the lawyer is apparent in the orderly presentation of the material, the consideration of contrary evidence and the general avoidance of conflict with existing hypotheses. There are a number of points where the writer's logical development of his subject seems based on premises that are not too valid. For example the use of biblical names and events in the account of Totonicapán could be more easily explained as the result of Spanish influence. This is also true of some items in the other native accounts cited. Too much is deduced from the fact, it seems to me, that a simple design on a Chiapas stamp resembles an Egyptian hieroglyph.

The familiarity of the author with the most modern New World archaeological information and theories is evident throughout the work, and he is particularly careful with regard to matters of chronology. People of the Mormon faith especially will find this latest version of the "Lost Tribes of Israel" to be most interesting reading.

MATTHEW STIRLING

*Bureau of American Ethnology  
Washington, D. C.*

JOURNAL D'UN VOYAGE À MÉROÉ dans les années 1821 et 1822, by LOUIS-AURICE-ADOLPHE LINANT DE BELLEFONDS, edited by MARGARET SHINNIE. xii, 199 pages, 28 plates, 3 maps. Sudan Antiquities Service, Khartoum 1958 (Occasional Papers No. 4) 125 P.T. or 25s.

Linant de Bellefonds was educated for a naval career, acquiring in the process a knowledge of cartography and skill as an artist-draftsman. But his love of travel led him at the age of twenty-two to undertake the expedition recorded in this diary. In Cairo he met William Banks, an English antiquarian, and at his request undertook this journey with the objective of locating the site of ancient Meroë and of making drawings of ancient monuments along the way. The drawings, together with a map and the manuscript diary (known as the Banks Manuscripts), are now deposited at the Griffith Institute, Ashmolean Museum, Oxford. Eighteen of them are reproduced in this book.

The diary is not translated but is

given in the original, rather archaic French, which makes surprisingly easy reading. The editor's footnotes are most helpful.

The book begins with Linant's arrival at Wadi Halfa at the end of August, 1821. Thence he followed the Nile, partly by boat and partly by camel-back, all the way to Sennar on the Blue Nile. After some weeks in and about Sennar he started downstream again, stopping off for some time at Shendi in order to visit the then unknown ruins at Naga and Musawar-es-Safra. At Meroë he stayed for a week and then resumed his journey north, retracing the steps of his outward route, but stopping off to map and draw at Gebel Barkal, Soleb and Semna, reaching Wadi Halfa again on June 13, 1822. Apart from passing references to heat and high winds Linant hardly mentions the hardships of summer travel in the Sudan. He followed in the wake of the Egyptian army of conquest, traveling under a firman from Ibrahim Pasha on which he relied to requisition supplies and transport for his journey. He speaks frequently of the people fleeing at his approach, of their abject poverty, and of the brutality of the soldiers. Yet he himself appears to have met with little hostility, a tribute to his tact and essential kindness, although he could, when necessary, invoke the authority inherent in his patron's firman.

To an archaeologist the descriptions of the antiquities of the Sudan are of marked interest. Although Linant had no archaeological training and the sites he visited had not been excavated, he had the advantage of seeing the temples and pyramids before they had suffered so much from weather and the hand of man.

One striking instance of Linant's keen powers of observation is his description of the largest of the pyramids at Nuri. He noted that it was a double structure—a smaller pyramid inside and covered by the larger one—and he observed that the two did not have a common axis. He made a drawing showing this peculiarity (not published here), which is now quite invisible, since in the ensuing century the pyramid has lost approximately thirty feet in height by denudation.

The book should be of particular interest at this time, for it describes a number of the important monuments



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which will be covered by the waters to be backed up by the projected Aswan High Dam.

Mrs. Shinnie is to be congratulated on her painstaking and competent editing of this fascinating journal, and our thanks are due to the Sudan Antiquities Service for making available this valuable document.

DOWS DUNHAM

*Museum of Fine Arts, Boston*

**GREEK ARCHITECTURE**, by A. W. LAWRENCE. xxxiv, 327 pages, 171 figures, 152 plates, 3 maps, 2 diagrams. Penguin Books, Baltimore 1957 (The Pelican History of Art) \$12.50

Each of the volumes of the *Pelican History of Art* already published has become the standard work in its particular field; that on Greek architecture is no exception. No other single volume on Greek architecture can approach it in its complete coverage of the subject, in the freshness of view which it maintains throughout and in the quantity and excellence of the illustration.

The tone of the whole volume is set by its first part, on pre-Hellenic buildings. In most "handbooks" this phase is either treated summarily in a brief chapter or is omitted. Here an 82-page section gives an account of early architecture from its Neolithic beginnings, through the first monumental stages in the Early Bronze Age to the great structures of Crete and those of the Mycenaean mainland. But besides the

mere description of existing remains, there are many new and interesting suggestions that deserve further investigation, such as Oriental prototypes for the Cretan palaces, all of which may have been the residence of a single ruler, and the origin in Asia Minor of Mycenaean megalithic architecture. The insistence on flat roofs for almost all pre-Hellenic buildings is an aberration which it is difficult to reconcile with the understanding of functional structure shown elsewhere in the book.

Equally thorough and suggestive is the treatment of the architecture of the Dark Ages after the Dorian Invasion and the formative centuries down to about 600 B.C. With the development of the Doric and Ionic orders, the recitation of the sequence of temples becomes more standard, but this is relieved by a consideration of the architectural ensembles that constitute the several great sanctuaries of Greece, as well as a number of minor ones. Here, in subsequent discussions of many building types, there is an attempt to erase the impression created by most handbooks that the temple is almost the sum total of Greek architecture. Beginning with the fifth century, much attention is given to circular buildings, to civic buildings—stoas, halls, theaters, baths, gateways, fortifications—to residential structures, both palatial and domestic, and to tombs. Finally, structural systems and town planning come in for consideration.

The short Epilogue is possibly the most interesting part of the book, for

in it Lawrence attempts to explain Greek architecture in its relation to Greek culture, Greek aesthetic ideals and Greek history. The continuity of the most basic architectural forms through thousands of years—from the Early Bronze Age, according to Lawrence, but really from even more remote Neolithic times—is perhaps the most striking feature in the development of Greek architecture. Its conservatism and its emphasis on the aesthetic rather than the practical are the most fundamental characteristics. Although immersed in his subject, Lawrence has been able to stand off and look at the whole range of Greek architecture, to see what is good and what is bad, then to determine why. Here is a masterful summary which combines expert knowledge, good taste and aesthetic judgment.

SAUL S. WEINBERG

*University of Missouri*

**CERAMICS FOR THE ARCHAEOLOGIST**, by ANNA O. SHEPARD. xii, 414 pages, 59 figures, 11 tables. Carnegie Institution of Washington, Washington, D. C. 1957

In almost any archaeological survey or excavation, anywhere in the world, the amount of pottery found far outnumbers the quantity of other material. It is of paramount importance for identifying cultures and for dating sites. In fact, it is difficult to imagine what archaeology would be like without pottery. The identification of clays and other constituents of ceramic wares is therefore of great significance. This volume is a basic work for the understanding of pottery from archaeological sites, and it will be of the greatest assistance in putting its classification on a firm basis.

The discussion is divided into the following chapters: Ceramic Materials, Ceramic Processes, Ceramic Analysis and Description, Problems of Pottery Classification, The Interpretation of Ceramic Data. Under these headings all the problems connected with ceramics are systematically disposed of, terms are defined, and the significance of ceramics in culture history is clearly explained.

The book is a model of clarity and system. If one were to wish for more, it would be for a discussion of wheel-made pottery, which is omitted because



it did not exist in the western hemisphere in prehistoric times. But even though the subject matter is confined to the American continents, there is much of value for archaeologists in both hemispheres. The volume is essential for everyone conducting research in the field.

G.D.W.

## BRIEF NOTICES

**CATALOGUE DES OBJETS DÉCOUVERTS PRÈS DE TREBENISTE**, by LJUBISA POPOVIC. 127 pages, 44 plates. National Museum, Beograd 1956 (Antiquité I) **LES TROUVAILLES DE TEKIYA**, by DJORDJE MANO-ZISI. 127 pages, 27 plates. National Museum, Beograd 1957 (Antiquité II)

The new series of publications of the Department of Antiquities of the National Museum at Belgrade is most welcome. An appropriate beginning is the catalogue of the Trebenishte treasures, known for thirty years from Filov's publication of the cemetery, but not subsequently made available.

The careful catalogue includes the pottery and glass as well as the more famous metal objects. The quality of the illustrations could be greatly improved in a later edition. In fact, those which illustrate the rich Roman silver treasure from Tekiya are much better and show admirably the quality of the finds. Found only ten years ago, the Tekiya hoard is much less well known and receives its first full publication here, minus the coins, which will be presented separately. With bilingual texts, including a full translation into French, these first two volumes represent well the important collections of the Belgrade Museum.

**GLI SPETTACOLI IN ACQUA NEL TEATRO TARDO-ANTICO**, by GUSTAVO TRAVERSARI. 161 pages, 2 plates. "L'Erma" di Bretschneider, Rome 1960 5000 lire

Perhaps the best known instances of these late antique installations for aquatic exhibitions in theaters are those at the Theater of Dionysus in Athens and the theater of Ostia; evidence for the practice, however, is very widespread and of different sorts, including representations in art.

**MIGRATIONS IN NEW WORLD CULTURE HISTORY**, edited by RAYMOND H. THOMPSON. 68 pages, 8 figures, 2 tables. University of Arizona Press, Tucson 1958 (University of Arizona Bulletin, Vol. 29, No. 2, Social Science Bulletin No. 27) \$1.00

Archaeologists are prone to invoke "migration" as a convenient explanation in a great many circumstances, often with little justification and with no clear idea how they would prove the inferred migration. Thinking should be much clearer on this subject if the lessons of this excellent symposium are taken to heart. Four examples of prehistoric migrations are presented, with proofs (two in the Southwestern United States, one across northern South America and one from Mexico to South America), and the linguistic evidence for long-distance migrations in the New World is discussed. Irving Rouse, in the final paper, presents the criteria that should be used for demonstrating that migration rather than diffusion, convergence or some other process has occurred. Although the papers do not all discuss migrations in the same terms, Rouse's excellent sum-

## ARCHAEOLOGICAL REPORTS

which have for many years been published by the Hellenic Society and the British School at Athens for their subscribers are now for the first time, and in a new form, offered for sale to the public. They include each year a comprehensive and fully illustrated account of new discoveries in Greece, and there are occasional reports summarizing for the student of the classics and the reader with a general interest in antiquity the results of work in other parts of the Greek world—Italy and Sicily, Asia Minor, etc. In addition there are bulletins describing important new acquisitions by museums in Britain.

### ARCHAEOLOGICAL REPORTS FOR 1959-60

will appear in late summer and include:

*Archaeology in Greece, 1959 . . .* by M. S. F. Hood, Director of the British School at Athens

*Greek Archaeology in Asia Minor . . .* by Prof. J. M. Cook, University of Bristol and former Director of the School at Athens

*Recent Acquisitions by the British Museum*

### THE REPORTS

are about 50 pages long and are illustrated with maps and photographs. They cost \$1.25, postage paid, and may be obtained from The Editor (Reports), The Hellenic Society, 31-34 Gordon Square, London W.C.1.

mary gives this little volume considerable importance. It should be read thoughtfully by all archaeologists, regardless of the geographic area of their interests.

**WESSEX BEFORE THE CELTS**, by J. F. S. STONE. 207 pages, 17 figures, 72 plates, frontispiece in color, 5 maps. Frederick A. Praeger, New York 1958 (Ancient Peoples and Places, edited by Glyn Daniel) \$5.00

Wessex, an important region for the study of British prehistory since the early nineteenth century, is here surveyed from the time of its first savage Palaeolithic and Mesolithic inhabitants. The life and activities of the first farmers of the Windmill Hill culture, their relations with older food-gathering peoples, and the invasions of the Beaker folk are vividly presented for the layman. The great monuments of Stonehenge, Avebury, Woodhenge and Durrington Walls occupy a major position. This well illustrated and produced book takes the story down to the coming of the Celts to this vital part of the British Isles.

**GRIECHISCHE GRIFFPHIALEN**, by ULF JANTZEN. 36 pages, 25 figures. Walter de Gruyter, Berlin 1958 (114. Winckelmannsprogramm der Archäologischen Gesellschaft zu Berlin) DM 24

The type of the bronze bowl or phiale with figured handle in human form is discussed, with emphasis on the sculptural and stylistic types of the handles, which are compared with similar figured handles of Greek bronze mirrors.

**BRONZE AGE CULTURES IN FRANCE**, by NANCY K. SANDARS. xviii, 412 pages, 97 figures, 12 plates, 3 tables. Cambridge University Press, New York 1957 \$19.50

The later phases of the Bronze Age cultures of France from the thirteenth to the seventh century B.C. here receive their first exhaustive treatment since before World War I. This is an excellent survey of the Middle and Late Bronze Age in France, with special emphasis given to the intrusive Tumulus and Urnfield cultures. Problems of typology and regionalization are presented with utmost attention to detail and full analysis of the controversies. This well produced and excel-

lently illustrated book is a necessity for all specialists concerned with Bronze Age France.

**VI. BERICHT ÜBER DIE AUSGRABUNGEN IN OLYMPIA**, by EMIL KUNZE and others. 225 pages, 138 figures, 83 plates. Walter de Gruyter, Berlin 1958 (Deutsches Archäologisches Institut)

An account of results of the excavation campaigns of 1953-54 and 1954-55, which concentrated on clearing the area south of the baths on the Kladeos, where large Hellenistic and Roman houses were uncovered. Other sections publish groups of bronze ornaments from shields, bronze helmets, terracotta sculptures and inscriptions, as well as a terracotta statuette of Pan and a marble head of Zeus.

**LA SILÉSIE ANTIQUE ET L'EMPIRE ROMAIN**, by EUGENE KONIK. 293 pages, 15 plates, 2 maps. Polskie Towarzystwo Archeologiczne, Warsaw 1959 (Biblioteka Archeologiczna 9) 60 Złoty

The history of Silesia and its relations with Rome from the first century B.C. to the fifth A.D., deduced chiefly from archaeological data. Text in Polish, résumé in French.

**TERMS USED IN ARCHAEOLOGY: A Short Dictionary**, by CHRISTOPHER TRENT. 62 pages. Philosophical Library, New York 1959 \$2.75

A good compendium, as far as it goes, "with the accent on Britain," but 240 entries can hardly begin to cope with archaeological terms, sites and periods of the whole world; thus the volume is limited in usefulness.

**THE EYE GODDESS**, by O. G. S. CRAWFORD. 168 pages, 46 figures, 48 plates, 1 table. The MacMillan Company, New York 1958 \$10.00

This last work of the late founder and editor of *Antiquity* ties the rise of the Eye Goddess to the fertility cults of Syria, Palestine and northern Iraq. Once the Eye Goddess was established as a symbol, the motif spread westward along with Near Eastern influences, gradually losing its original significance as it reached the Aegean, South Italy and Spain. Caught up in the great Megalithic diffusion, it spread farther north to Brittany, Ireland and Britain. This study of a symbol and its diffusion and survival into modern

times is challengingly speculative. It will interest all who are concerned not only with religion but with the development of man's ideas of himself and his world.

**HISTORIC ARCHEOLOGY AT FORT PITT, 1953**, by JAMES L. SWAUGER and ARTHUR M. HAYES. 28 pages, 12 illustrations. Carnegie Museum, Pittsburgh 1959 (Anthropological Series, No. 4; reprinted from *Annals of Carnegie Museum*, vol. 35, 1959, pp. 247-274)

A detailed account of the excavations in downtown Pittsburgh that located and unearthed the ruins of historic Fort Pitt, with plans, photographs and descriptions.

**PATTERN AND PURPOSE**, by Sir CYRIL FOX. 160 pages, frontispiece, 83 figures, 80 plates, 3 maps, 1 diagram. The National Museum of Wales, Cardiff 1958 45s.

This book, in which the curvilinear ornament of Celtic art is carefully analyzed in terms of its development in the British Isles from the third century B.C. to the Roman conquest, is primarily for the specialist. The application of this style of ornamentation to mirrors and personal ornament, to tankards and spoons, and to weapons and chariot fittings will be of interest to all students of Celtic culture.

**EXCAVATIONS AT NANTACK VILLAGE**, Point of Pines, Arizona, by DAVID A. BRETERNITZ. xi, 76 pages, 48 figures, 5 tables. University of Arizona, Tucson 1959 (Anthropological Papers, No. 1) \$1.75

This attractively produced volume inaugurates a new series of anthropological publications. It reports the details of a tenth-century pithouse village in the mountains of eastern Arizona. Ten shallow, rectangular structures were excavated and "several" others left undug. House details and the associated artifacts, particularly pottery, are used to define a Nantack Phase of the local branch of the Mogollon culture. One oversize pithouse, about 11 by 13 m. with a broad stepped entrance, is believed to be a ceremonial structure serving all the villages of the region, since no comparable structure is known elsewhere in the Point of Pines area on this time level.

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